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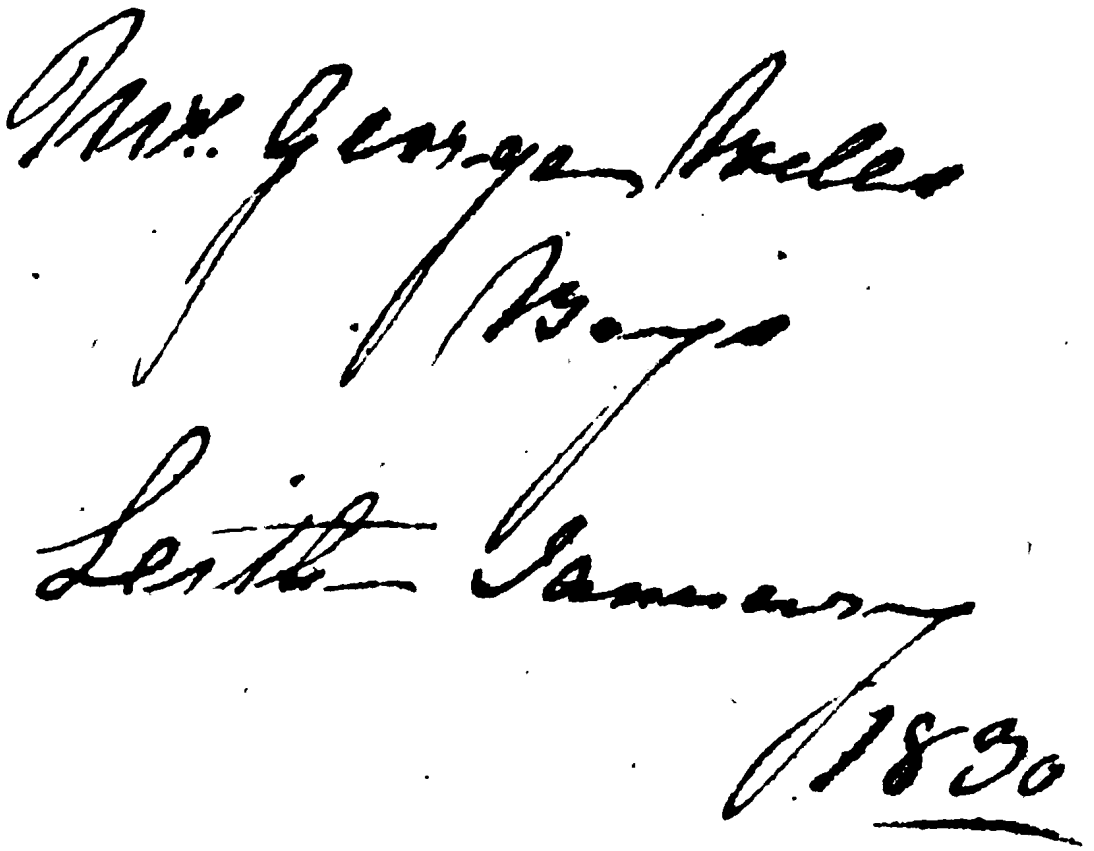

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THE

NATURAL HISTORY

OF

ANIMALS:

CONTAINING

AN ACCOUNT OF REMARKABLE BEASTS, BIRDS, FISHES, AND INSECTS,

DUBLIN:

SMITH & SON, PRINTERS, MARY-STREET.

1822.

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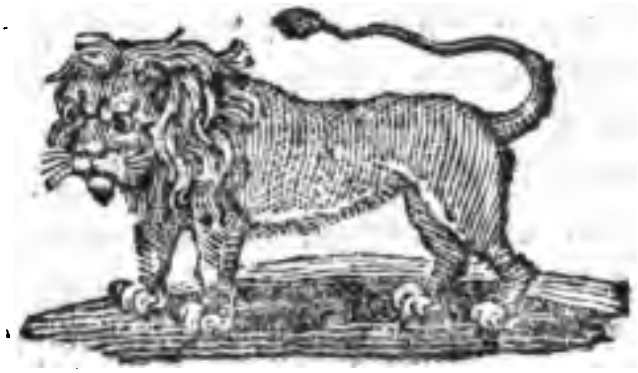
NATURAL HISTORY.



THE LION.

Fiercest of all, the lordly Lion stalks,
Grimly majestic in his lonely walks;
When round he glares, all living creatures fly,
He clears the desert with his rolling eye.
By the pale moon they take their destined round,
And lash their sides, and furious tear the ground.
Now shrieks and dying groans, the desert fill;
They rage, they rend; their rav'nous jaws distil
With crimson foam; and when the banquet's o'er
They stride away, and print their steps with gore.
In flight alone, the shepherd puts his trust,
And shudders at the talon in the dust.

THE outward form of the Lion at once proves his claim to the title of king of beasts. His figure is striking, his look confident and bold, his gait proud, and his voice terrible. He has a large head, a shaggy mane which adds much to his apparent

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size, strong limbs, and a long tail tufted at the extremity: the general colour is tawny. From the nose to the beginning of the tail, a full grown Lion will measure eight feet. The Lioness is somewhat smaller and has no mane. In both the male and female, the make of the paws, teeth, eyes, and tongue, is the same as in a cat; the two animals differing only in size.

The Lion when hungry, boldly attacks all animals that come in his way; but, as he is very formidable, and as they all seek to avoid him, he is often obliged to hide, in order to take them by surprise. For this purpose, he crouches on his belly, in some thicket, or among the long grass, which is found in many parts of the forest; in this retreat, he continues patiently until his prey comes within a proper distance, and he then springs after it, fifteen or twenty feet from him, and often seizes it, at the first bound. Man is the only creature, that attacks him with almost certain success, with the assistance of dogs and horses, which are trained to the pursuit. When the Lion is roused, he recedes with a slow, proud motion; he never goes off directly forward, but takes an oblique course, going from one side to the other, and bounding rather than running. When the hunters approach him, they either shoot or throw their javelins; and in this manner disable him, before he is attacked by the dogs, many of whom he would otherwise destroy. He is also taken by pitfalls; the na-

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tives digging a deep hole in the ground, and covering it slightly over with sticks and earth; which, however, give way beneath his weight, and he sinks to the bottom, from whence he has no means of escape. But the most usual manner of taking this animal, is while a whelp, and incapable of resistance. The den of the Lioness is generally well known by the greatness of her depredations on that occasion; the natives, therefore, watch the time of her absence, and aided by a swift horse, carry off her cubs; which they sell to strangers, or to the great men of their country.

Experience sufficiently shews, that the Lion might easily be tamed; in fact, nothing is more common, than for the keepers of wild beasts, to play with this animal, to pull out his tongue, and even to chastise him without a cause. He seems to bear it all with the utmost composure and we very rarely have instances of his revenging these unprovoked sallies of cruelty. However, when his anger is at last excited, the consequences are terrible. Labat tells us of a gentleman, who kept a Lion in his chamber, and employed a servant to attend it; who, as is usual, mixed his blows with caresses. This ill-judged conduct continued for some time; till one morning, the gentleman was awakened by a noise in his room, which, at first, he could not tell the cause of; but drawing the curtains, he perceived a horrid spectacle; the Lion growl-

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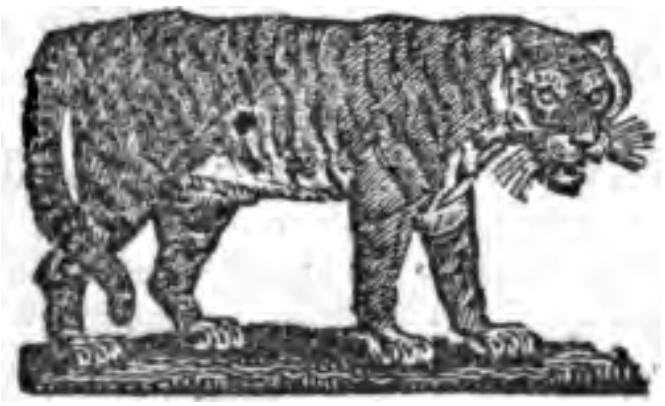
ing over the man's head, which he had separated from the body, and tossing it round the floor. He immediately, therefore, flew into the next room, called to the people without, and had the animal secured from doing further mischief.

As to the Lion's age, from its imprisoned state, we can have no certainty; it is probably, however, about a hundred years. The great he-lion, called Pompey, which died in the year 1760, was known to have been in the Tower for above seventy years; and one lately died, which was brought from the river Gambia, that had lived there above sixty-three years.



THE TIGER.

THE ancients had a saying, "that as the Peacock is the most beautiful among the birds, so is the Tiger among the quadrupeds." This animal's disposition however is as mischievous as its form is admirable: as if Providence was

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willing to shew the small value of beauty, by bestowing it on the most noxious of quadrupeds.

The chief and most observable distinction in the Tiger, is in the shape of its colours, which run in streaks or bands, in the same direction as the ribs, from the back down to the belly. In other respects, it most resembles the cat in shape; and, if we conceive the latter magnified to a very great degree, we shall have a tolerable idea of the former.

When it has killed a large animal, such as a horse or a buffalo, it immediately begins to devour it on the spot, fearing to be disturbed. In order to feast at its ease, it carries off its prey to the forest, as a fox does a goose, dragging it along with such ease, that the swiftness of its motion seems scarcely retarded by the enormous load it sustains. It may here be observed, that, in India, the buffalo weighs a thousand pounds.

Though this animal is sometimes found to fly from the approach of man, it is at other times found equally ready to attack the human species, as appears from the account of the loss of Mr. Munro, son of Sir Hector Munro, Bart. whose shocking death carries a melancholy interest along with it, which will cause it long to be remembered. This fatal occurrence happened in Bengal, in the East-Indies, in the year 1792, and the account, as given by an eye witness, is as follows:—"We went (says the narrator)

on shore on Sugar Island, to shoot deer, we continued our diversion till nearly three o'clock; when, sitting down by the side of a jungle to refresh ourselves, a roar like thunder was heard, and an immense Tiger seized our unfortunate friend, poor Munro, and rushed again into the jungle, dragging him through the thickest bushes and trees, every thing giving way to its monstrous strength. The united agonies of horror, regret, and fear, rushed upon us. I fired on the Tiger; he seemed agitated. My companion fired also; and in a few moments after this, our unfortunate friend came up to us, bathed in blood. Every medical assistance was vain; and he expired in the space of twenty-four hours, having received such deep wounds from the teeth and claws of the animal, as rendered his recovery hopeless. A large fire, consisting of ten or twelve whole trees, was blazing near us, at the time this accident took place, and ten or more of the natives were with us. The human mind can scarcely form any idea of this scene of horror. We had but just pushed our boat from this hateful shore, when the Tigress made her appearance, almost raging mad, and remained on the strand all the while we continued in sight."

In the beginning of the last century, a company, seated under the shade of some trees near the banks of a river in Bengal, were happily preserved from a similar misfortune by the almost unexampled presence of mind of a young

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lady, who chanced to be of the party: upon the first appearance of the Tiger preparing for its fatal spring, this young lady unfurled a large umbrella in the animal's face, which, being confounded by so extraordinary and sudden an appearance, instantly retired, and thus gave them an opportunity of escaping from its terrible attack.

THE ELEPHANT.

The noblest quadruped in nature, is the Elephant: not less remarkable for its size, than its docility and understanding; and yet, were we to take our idea from its outward appearance, we should be led to conceive very meanly of its abilities. But we should never judge from appearances, for our prejudices will subside when we come to examine its history; and consider the various advantages it derives from so clumsy a figure.

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As no description can give an adequate idea of this animal's figure, we shall refer the reader to the plate, and endeavour to give a short account of its character.

Of all quadrupeds, the Elephant is the strongest, as well as the largest, being from seven to fifteen feet high, and capable of drawing burdens which six horses cannot move; and yet, in a state of nature, it is neither fierce nor formidable. Peaceful and brave, it never abuses its power or its strength, or that of its community. In its native deserts, it appears to be a social friendly creature. The oldest of the company conducts the band; that which is next in seniority brings up the rere. Nothing can be more formidable than a drove of elephants, as they appear at a distance, in an African landscape; wherever they march, the forest seems to fall before them; and, if they enter into an inclosure, they destroy all the labours of the husbandman, in a very short time.

The chief food of the elephant is of the vegetable kind; in their natural state, they delight to live along the sides of rivers, the water of which, they always disturb before they drink. They often fill their trunks with it, spurting it out again in the manner of a fountain, either for amusement or revenge.

In Delhi, an elephant, passing along the streets, put his trunk into a tailor's shop, where several people were at work. One of the per-

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sons of the shop, desirous of some amusement, pricked the animal's trunk with his needle, and seemed highly delighted with this slight punishment. The elephant, however, passed on without any immediate signs of resentment; but, coming to a puddle filled with dirty water, he filled his trunk, returned to the shop, and spurted the contents over all the finery upon which the tailors were then employed.

The elephant, as we have observed, has very small eyes, yet when we come to examine them, they are full of expression. It turns them with attention and friendship to its master, and even seems to reflect and deliberate. This animal's sense of smelling is very exquisite, but it is in the sense of touch that it excels all others of the brute creation. The trunk, which is the organ of this sense, is only the snout lengthened out and hollow like a pipe, and ending in two openings, like the nostrils of a hog. This serves all the purposes of a hand, is capable of being moved in every direction, lengthened, shortened, bent or straitened. Through it the animal breathes, drinks, and smells, as through a tube; and at the very point of it, just above the nostrils, there is an extension of the skin, about five inches long, in the form of a finger, and which, in fact, answers all the purposes of one; by means of this, the elephant can take a pin from the ground, or untie

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the knots of a rope, unlock a door, and even write with a pen.

In order to take them wild in the woods, a spot of ground near their haunts is surrounded with a palisade of the strongest trees; and strengthened by cross-bars. To draw him into this inclosure, a female elephant is conducted into the heart of the forest, where it is obliged by its keeper to cry out for the male. The male very readily answers the cry, and hastens to join her; which, the keeper perceiving, obliges her to retreat; still repeating the same cry, until she leads the animal into the inclosure already described, which shuts, the moment he is entered. Still, however, the female continues calling and inviting, while the male proceeds forward in the inclosure, which grows narrower all the way, until the poor animal finds himself completely shut up, without the power of either advancing or retreating; the female, in the mean time, being let out by a private way. The wild elephant, upon seeing himself entrapped in this manner, instantly attempts to use violence. In the mean time, the hunters, having fixed him with cords, attempt to soften his rage, by throwing buckets of water upon him in great quantities, rubbing the body with leaves, and pouring oil down his ears. Soon after, two tame elephants, a male and a female, are brought, that caress the indignant animal with their trunks; while they still continue,

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pouring water to refresh it. At last, a tame elephant is brought forward, and an officer riding upon it, in order to shew the new captive that he has nothing to fear. The hunters then open the inclosure; and, while this creature leads the captive along, more are joined on either side of it and these compel it to submit. It is then tied by cords to a massy pillar, and suffered to remain in that position for about a day and a night, until its indignation be wholly subsided. The next day it begins to be somewhat submissive; and, in a fortnight, is completely tamed like the rest.

The elephant, when once tamed, becomes the most gentle and obedient of all animals. It soon conceives an attachment for its keeper, and perfectly distinguishes the tone of command from that of anger or approbation; it is quickly taught to kneel and receive its rider; it caresses those it knows, with its trunk; and with this, as with a hand, helps to take up part of its load. It draws either chariots, cannon, or shipping, with surprising strength and perseverance; and this with a seeming satisfaction, provided that it be not beaten without a cause, and that its master appear pleased with its exertions.

The elephant's conductor is usually mounted upon its back; and makes use of a rod of iron to guide it, but, in general, a word is sufficient to put the gentle animal into motion, especially, when it is acquainted with its conductor; and

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it has been known to die of grief, when, in some sudden fit of madness, it has killed its conductor. We are told, that one of these, that was used by the French forces in India, for the dragging of cannon, was promised, by the conductor, a reward, for having performed some painful service; but being disappointed of its expectations, it slew him in a fury. The conductor's wife, who was a spectator of this shocking scene, could not restrain her madness and despair; but running with her two children in her arms, threw them at the elephant's feet, crying out, that since it had killed her husband, it might kill her and her children also. The elephant, seeing the children at its feet, instantly stopped, and moderating its fury, took up the eldest with its trunk, and placing him upon its neck, adopted him for its conductor, and obeyed him ever after with great punctuality.

At the Cape of Good Hope, the teeth of this animal are of great value, and furnish the article called ivory. For this alone, elephants are frequently killed, and the hunter, who is fortunate enough to procure them, willingly submits to the danger and trouble of the chase. Three Dutchmen, brothers, who had made large fortunes by this business, determined to retire to Europe, and enjoy the fruits of their labours; but they resolved, one day before they went, to have a last chase, by way of amusement; they met with their game, and began their

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attack in the usual manner; but unfortunately, one of their horses falling, happened to fling his rider; the enraged elephant instantly seized the unhappy huntsman with his trunk, flung him up a vast height in the air, and received him upon one of his tusks as he fell; and then turning towards the other two brothers, as if it were with an aspect of revenge and insult, held out to them the impaled wretch, writhing in the agonies of death.

THE RHINOCEROS.

Next to the elephant, the Rhinoceros is the most powerful of animals. It is found in the deserts of Asia and Africa, and is, usually, twelve feet long, from the tip of the nose to the insertion of the tail; from six to seven feet high; and the circumference of its body is nearly equal to its length. Its head is furnished with a horn, growing from the snout, sometimes three feet and a half long; the eyes are small, the skin is naked; rough, knotty, and lying upon the body in folds, after a very peculiar fashion, and is so thick as to turn the edge of a sword, and to resist a musket ball.

Such is the general outline of an animal that appears chiefly formidable from the horn growing from his snout. The elephant, the boar, or

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the buffalo, are obliged to strike transversely with their weapons: but the Rhinoceros employs all his force with every blow; so that the tiger will more willingly attack any other animal of the forest, than one whose strength is so justly employed, indeed, the missionaries assure us, that even the elephant is often found dead in the forest, pierced with the horn of a Rhinoceros.

The Rhinoceros, which was shewn at London, in 1739, and described by Doctor Parsons, had been sent from Bengal. Though it was very young, not being above two years old, yet the charge of his carriage and food from India, cost nearly a thousand pounds. It was fed with rice, sugar, and hay: its drink was water, which it took in great quantities. It was of a gentle disposition, never attempting mischief, except when abused, or when hungry; in such a case, it would jump up against the walls of its room, with great violence; it made many efforts to escape, but seldom attempted to attack its keeper, and was always submissive to his threats.

As the Rhinoceros subsists entirely upon vegetable food, it is peaceful and harmless among its fellows of the brute creation. It is particularly fond of the prickly branches of trees, and is seen to feed upon such thorny shrubs as would be dangerous to other animals, either to gather or to swallow.

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THE HIPPOPOTAMUS, OR RIVER HORSE.

Mild is this animal, tho' large his frame:
Smooth is his temper, and represt his flame
While unprovoked. This native of the flood
Lifts his broad foot and puts ashore for food;
Earth sinks beneath him as he moves along
To seek the herbs and mingle with the throng:
The uplands feed him: there the beasts admire
The mighty stranger, and in dread retire.
The fens and marshes are his cool retreat,
His noon-tide shelter from the burning heat;
Their sedgy bosoms his wide couch are made,
And groves and willows give him all their shade.

The Hippopotamus, or River Horse, is an animal about seventeen feet long, sixteen feet in circumference round the body, and abqve seven

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feet high; its whole figure is something between that of an ox and a hog, and its cry something between the bellowing of one, and the grunting of the other.

This animal, however, though so terribly furnished for war, seems no way disposed to make use of its prodigious strength against an equal enemy; it chiefly resides at the bottom of the large rivers and lakes of Africa, the Nile, the Niger, and the Zara; there it leads an indolent kind of life; and seems seldom disposed for action, except when excited by the calls of hunger. Upon such occasions, three or four of them are often seen at the bottom of a river, near some cataract, forming a kind of line, and seizing upon such fish as are forced down by the violence of the stream. In that element, they pursue their prey with great swiftness and perseverance; they swim with much force, and remain at the bottom for thirty or forty minutes without rising to take breath. They traverse the bottom of the stream, as if walking upon land, and make a terrible devastation where they find plenty of prey. But it often happens, that this animal's fishy food is not supplied in sufficient abundance; it is then forced to come upon land, where, though it is an awkward unwieldly stranger, it commits dreadful havock among the plantations of the helpless natives, who see their possessions destroyed, without daring to

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resist their invader. Their chief method is, by lighting fires, striking drums, and raising a cry, to frighten it back to its favourite element; and, as it is extremely timorous upon land, they generally succeed in their endeavours. But if they happen to wound, or otherwise irritate it too closely, it then becomes formidable to all that oppose it: it overturns whatever it meets, and brings forth all its strength, which it seemed not to have discovered before that dangerous occasion. It possesses the same inoffensive disposition in its favourite element, that it is found to have upon land; it is never found to attack the mariners in their boats, as they go up or down the stream; but should they inadvertently strike against it, or otherwise disturb its repose, there is much danger of its sending them, at once, to the bottom. "I have seen," (says a mariner,) "one of these animals open its jaws, and seizing a boat between his teeth, at once bite and sink it to the bottom. I have seen it upon another occasion, place itself under one of our boats, and rising under it, overset it with six men which were in it; who, however, happily received no other injury."

Dr. Sparrman gives the following account of a rencounter he had with a Hippopotamus, one night that he had formed a party to intercept it in its way to the higher grounds:—"We set ourselves down close by each other's side, in a path made by the animals of this kind, making ourselves pretty sure, as the place was flat, of

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being able, in case any Hippopotamus should happen to approach, of being able to kill it with a volley of three shot. But, to the great endangering of our lives, we on a sudden found the animal much quicker in its motions, as well as bolder than we had thought it; for while I was sitting half asleep, a river horse came out of the river, rushing upon us with a hideous cry, and as swift as an arrow out of a bow; at the same time, I heard the farmer call out to warn me of its approach; luckily, at the very instant he discharged his piece, which, flashing full in the animal's face, contributed, perhaps, more than the ball, to make it start back, when setting up another cry, it threw itself into the water again, with as great precipitation as it came out."

In order to catch these animals, the natives dig large holes in the ground along the banks of rivers; in the bottom of these pits, they place pieces of wood sharpened at the points, and then cover the cavity with branches of trees and turf. When the river-horses come out of the river in the night to graze, they often fall into these snares, and very frequently receive wounds which cause their death. The hunters, however, must be very careful in covering the pits, as the animal will not readily go except where there are prints of the feet of its own kind; on this account, the natives always keep a foot to mark the sand which covers the pit.

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THE CAMELOPARD.

The existence of this animal was for a long time doubted in Europe. The most credulous could scarcely believe that any animal was so tall that a man on horseback could ride under it without stooping; yet strange as it may have appeared, the fact is strictly true, or very nearly so. The Camelopard partakes both the figure of the deer and the camel, and in some respects that of the horse also; its forelegs are twice as long as its hind, so that in a standing posture, it has some resemblance to a dog sitting. It has been found eighteen feet in height before. but being a native of the most sequestered parts of South Africa, it has been seldom seen in Europe.

Notwithstanding its vast size, it is utterly incapable of defence, except in flight; its horns are blunt, its teeth fitted only for eating vegetables, and its legs it cannot use in kicking, so

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that it is very timorous, and flies from every enemy. It is not of any service to man. The shortness of its back, and the steep descent from the shoulders to the rump (being three feet in seven) combined with its awkward motion, render it unfit for riding, and still more so for carrying burdens; yet it is sought after through curiosity, and has been sent from Africa to Europe, and the remotest parts of Asia; the strangeness of its form, and the beauty of its spotted skin, are too alluring to be resisted. The skin of one has been presented to Trinity College, Dublin, in whose museum it may be seen, stuffed and preserved; but there is another in the hall of the College of Surgeons in Stephen's-Green, which is in much better preservation, and well deserves a visit from the curious.

THE ZEBRA.

This beautiful animal is chiefly a native of the southern parts of Africa; and there are whole herds of them often seen feeding in those

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extensive plains that lie towards the Cape of Good Hope. In shape it rather resembles the mule than the horse or the ass. It is rather less than the former, and yet larger than the latter. But its greatest beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown; in the female, white and black; and in both they are disposed in alternate stripes, and with the greatest exactness and symmetry over the whole body.

Such is the beauty of this creature, that it would make a valuable addition to our domestic animals; as yet, however, no efforts to tame it have been successful. Their vigilance is so great, that they will suffer nothing to approach them; and such is their fleetness, that they soon leave every pursuer behind.

THE REIN-DEER.

Of all animals found in the Northern parts of the earth the Rein-deer is the most extraordinary and the most useful. From it alone, the natives of Lapland and Greenland supply most of their wants; it answers the purpose of a horse to convey them and their scanty furniture from one mountain to another; it answers the purpose of a cow, in giving milk. From that part of the skin which covers the head and feet, they make their strong snow shoes with the hair on the outside. Of the other parts they compose

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their garments, which are extremely warm, and which cover them all over, or else make use of them as beds.

In short, no part of this animal is useless. The blood is preserved in small casks, to make sauce with the marrow in spring. The horns are sold to be converted into glue. The sinews are dried, and divided so as to make a strong sewing thread, not unlike catgut. The tongues, which are considered as a great delicacy, are dried, and sold into the more southern provinces. The intestines themselves are washed like our tripe, and in high esteem among the natives. Thus, the Laplander finds all his necessities amply supplied from this single animal; and he who has a large herd of these animals, has no idea of higher luxury.

The colour of Rein-deer in winter is brown, but as summer approaches, the hair becomes almost gray. It is an animal lower and stronger built than the stag; its hoofs are cloven and moveable, so that it spreads them out broad as it goes, to prevent its sinking in the snow. When it proceeds on a journey, it lays its great horns on its back, while there are two branches, which always hang over its forehead, and almost cover its face. The female, of the Rein-deer, has horns as well as the male, by which the species is distinguished from all other animals of the deer kind whatsoever.

The Rein-deer of Lapland are of two kinds, the wild and the tame. The wild are larger

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and stronger, but more mischievous than the others. Their breed, however, is preferred to that of the tame; being fitter for drawing the sledge, to which the Laplander accustoms them betimes, and yokes them to it by a strap, which goes round the neck, and comes down between their legs. Their sledge is extremely light, and shod at the bottom, with the skin of a young deer, the hair turned to slide on the frozen snow. The person who sits on this, guides the animal with a cord, fastened round the horns; when hard pushed, it will trot between fifty and sixty English miles, at one stretch. In general, however, they can go about thirty miles without halting, and this without any great or dangerous effort.

But, although the Rein-deer be a very hardy and vigorous animal, it is not without its diseases. Its hide is often found pierced in a hundred places, like a sieve, by the gad fly, and not a few die in their third year, from this very cause. But the most fatal disorder of all, is that which the natives call the suddataka, which attacks this animal at all seasons of the year. The instant it is seized with this disease, it begins to breathe with great difficulty, its eyes begin to stare, and its nostrils to expand. It acquires also an unusual degree of ferocity, and attacks all it meets indiscriminately. This disorder is contagious; and the moment the Laplander perceives any of his herd infected, he

hastens to kill them immediately, before it spreads farther. The only cure in all these disorders, is to anoint the animal's back with tar; if this does not succeed, the disease is considered as beyond the power of art; and the animal is immediately destroyed.

Besides the internal diseases of this animal, there are some external enemies which it has to fear. The bears, now and then, make depredations upon the herd; but of all their persecutors, the creature called the glutton, is the most dangerous and the most successful.

A number of these animals were in the summer of this year (1822) brought from Lapland by Mr. Bullock, and found to thrive very well in our climate.—He sent eighteen of them into this country, and after having exhibited them in the Rotunda Rooms, Dublin, for some time, sold them to a gentleman of fortune, who intends to encourage the breed.

THE GLUTTON.

The Glutton, which is so called from its voracious appetite, is an animal about three feet long, and a foot and a half high; it is black along the back, and of a reddish brown on the sides; its fur is held in the highest estimation, for its softness and gloss; and its legs and claws are better fitted for climbing trees, than

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for running along the ground. These it ascends with great ease, and there waits with patience, until the rein-deer or the elk passes underneath, upon which it darts down with unerring certainty, sticks its claws between its shoulders, and remains there unalterably firm. It is in vain that the large frighted animal increases its speed, rubs itself against the largest trees, and tears down the branches with its expanded horns; its insatiable foe still sticks behind, eating its neck, and digging its passage to the great blood-vessels that lie in that part.

It is astonishing how much flesh one of these animals is able to devour—one is mentioned who, though in captivity and labouring under ill health, daily devoured thirteen pounds and still remained unsatisfied. Indeed the Glutton will eat such immoderate quantities, that its whole frame becomes swelled and altered: but like all epicures, it is seized with lassitude, and lies totally torpid, for two or three days. In this loathsome and helpless state, it finds its chief protection from its horrid smell, which few animals care to come near.

The Glutton, like all the rest of its kind, is a solitary animal; and is never seen in company except with its female, which brings forth two or three at a time. They burrow in holes as the weasel; and are very resolute in defence of their young; fighting against dogs obstinately, and biting most cruelly. However, as the

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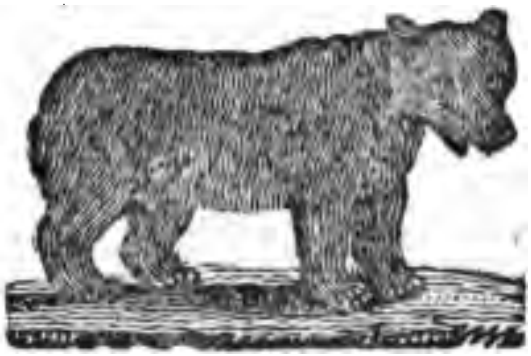
are unable to escape by flight, the hunters come in to the assistance of the dogs, and easily overpower them. Their flesh, it may readily be supposed, is not fit to be eaten; but the skins amply recompense the hunters for their toil and danger. The fur has the most beautiful lustre that can be imagined, and is preferred before all others, except that of the Siberian fox, or the sable.



THE BEAR.

Of the Bear, there are three different kinds, the brown Bear of the Alps, the black Bear of North-America, which is smaller, and the great Greenland, or white Bear. The brown Bear differs so little from the black Bear in its habits and appearance, that the history of the one will convey an adequate idea of the other. It is not only savage but solitary; it sleeps in the most unfrequented retreats, and in these brings forth its young. After becoming fat in autumn, these animals retire to their dens, and there

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pass six or seven weeks of the winter without provisions, or without ever stirring abroad. Vulgar error says, that they live by sucking their paws during this period of seclusion, but they are no doubt sustained by their former abundance of fat.

The voice of the Bear is a kind of growl, interrupted with rage: it is an animal capable of some degree of instruction, but though tamed, it is capricious, revengeful, and treacherous, and therefore should not be trusted.

The white Greenland Bear though it preserves in general the outward form of other Bears, yet it grows to above three times the size. When our mariners land upon the unfrequented shores of Greenland, the white Bears come down to view them with an awkward curiosity; but when they are shot at, or wounded, they endeavour to fly, or else make a fierce and desperate resistance till they die. As they live upon seals and dead whales, their flesh is too strong for food, and the captors have nothing but the skin to reward them, for the dangers incurred in the engagement.

It often happens, that when a Greenlander and his wife are paddling out at sea, by coming too near an ice float, a white bear unexpectedly jumps into their boat, and if he does not overset it, sits calmly down, and like a passenger suffers himself to be rowed along. It is probable the poor little Greenlander is not very fond of his

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new guest, however, he makes a virtue of necessity, and hospitably rows him to shore.

THE WOLF.

The Wolf is something taller but more slender than our great breed of mastiffs; what principally distinguishes him from the dog, which he very much resembles in figure, is the eye, which opens slantingly upwards, in the same direction with the nose. The colour of the eye-balls is of a fiery green, and the whole visage has a fierce and formidable air, which his natural disposition does by no means contradict.

The Wolf is one of those animals, whose appetite for animal food is the most vehement; and whose means of satisfying it are the most various. Nature has furnished him with strength, cunning, agility, and all the requisites for pursuit or conquest; and yet, the Wolf most frequently dies of hunger; being every where detested, he is obliged to fly from human habitations, and only when pressed with hunger, ventures to attack those animals which are under the protection of man, particularly such as he can readily carry away, lambs, sheep, or even dogs themselves.

It sometimes happens, that a whole country is called out to extirpate these most dangerous invaders. The hunting of the Wolf is a favourite

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diversion among the great of some countries; and it must be confessed, it is a kind of chase at which humanity needs not blush; when the Wolf is once put up, it is then proper to have gray-hounds to let fly at him, in leashes, one after the other. When the animal is killed, the dogs testify no appetite to enjoy their victory, but leave him where he falls, a frightful spectacle, and even in death hideous.

Several other arts have been also used to take and destroy this noxious animal. He is secured in traps, or he is poisoned by carcases prepared and placed for that purpose, and is caught in pit-falls. France, Spain, and Italy, are greatly infested with wolves which occasionally attack the villages among the Alps, and infest other mountainous and woody parts of the continent: of these ravenous invaders, Thompson has given a most spirited description,

By wintry famine roused, from all the tract
Of horrid mountains, which the shining Alps,
And wavy Appennines, and Pyrenees,
Branch out stupendous into distant lands,
Cruel as death, and hungry as the grave
Burning for blood! bony, and gaunt, and grim;
Assembling wolves in raging troops descend,
And, pouring o'er the country, bear along:
Keen as the north-wind sweeps the glossy snow,
All is their prize. They fasten on the steed,
Press him to earth, and pierce his mighty heart:

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Nor can the bull, his awful front defend,
Or shake the murdering savages away.
Rapacious, at the mother's throat they fly,
And tear the screaming infant from her breast.
The god-like face of man avails him nought,
But if, apprized of the severe attack
The country be shut up, lur'd by the scent,
On church-yards drear (inhuman to relate)
The disappointed prowlers fall, and dig
The shrouded body from the grave.

Wolves are said to have infested Ireland long after they were extirpated in England; and great care was bestowed in training up a very large breed of dogs called the Irish wolf-dog, for the purpose of hunting them down. Wolves existed in the great woods of Shillela, until about the year 1700, when the last of them was destroyed in the neighbourhood of Glendaloch; however, the oldest men in the country remember nothing of these animals, and it is probable, that there have been none here for more than a century past. Scotland also is totally free from them.

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THE HYÆNA.

The Hyæna is nearly of the size of a wolf; and has some similitude to that animal in the shape of its head and body. But no words can give an adequate idea of its deformity and fierceness. More savage than any other quadruped, it seems to be for ever in a state of rage, for ever growling, except when receiving its food. Its eyes then glisten, the bristles of its back all stand upright, its head hangs low, and yet its teeth appear; while a dreadful howl heightens its frightful aspect: indeed, at all times, it is the most untractable, and the most terrible of all other quadrupeds; nor does its courage fall short of its ferocity; it defends itself against the lion, is a match for the panther, and seldom fails to conquer the ounce.

It is a solitary animal, to be found chiefly in the most desolate parts of very warm coun-

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tries. It resides in the caverns of mountains, or in dens, that it has formed for itself under the earth. Though taken ever so young, it cannot be tamed; it lives by depredations, like the wolf, but is stronger, and more courageous. It sometimes attacks man, carries off cattle, follows the flock, breaks open the sheep-cots by night, and ravages with insatiable voracity. Its eyes shine by night; and it is said to see better by night than by day.

THE SABLE.

Of all the animals whose skins furnish us with furs, that of the Sable is held in the highest esteem. It is a brownish black, and the darker it is, the more it is valued. It resembles the weasel in vivacity, and agility, in sleeping by day and seeking its prey by night; and in the disagreeable smell that it sends forth.

Sables are mostly found in Siberia, and winter is the season when their fur is finest. The hunting of the Sable chiefly falls to the lot of the condemned criminals, who are sent from Russia into these wild and extensive forests, which are covered with snow. These are obliged to furnish a certain number of skins every year, and are punished, if the proper quantity be not provided.

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The Sable is also killed by the Russian soldiers, who are sent into those parts to that end, and they are obliged to shoot only with a single ball, to avoid spoiling the skin, or else with cross bows and blunt arrows. As an encouragement to the hunters, they are allowed to share among themselves the skins they procure over the number required of them, and this, in the course of six or seven years, amounts to a considerable sum. A colonel, during his seven years stay, gains about four thousand crowns for his share, and the common men, six or seven hundred each.

THE MARMOT.

The Marmot is almost as big as a hare, which it resembles in the shape of its head, its ears, however, are shorter, and its tail more tufted. It has five claws behind, and only four before. These it uses as the squirrel does, to carry its food to its mouth; and it usually sits upon its hinder parts, to feed in the manner of that little animal.

The Marmot is chiefly a native of the Alps; which are very high mountains, between France and Italy, and when taken young, is easily tamed and taught to dance, and to obey the voice of its master, and to perform several tricks; it is in general, a very inoffensive animal; and, except

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in its enmity to dogs, seems to live in friendship with every creature, unless when provoked.

These animals, eat indiscriminately, flesh, bread, fruits, herbs, roots, pulse, and insects. But they are particularly fond of milk and butter. Though cleanly in their habits, they have a disagreeable scent in warm weather: as the cold sets in, however, they prepare their winter residence, where they remain in a torpid state till the return of spring. This little animal's retreat is a hole on the side of a mountain, extremely deep, with a spacious apartment warmly lined with moss at the bottom: in this several Marmots can reside at the same time. But the form of their hole resembles the letter ⋋; the two branches being two openings, which conduct into one channel, terminating in their general apartment, which lies at the bottom. One of the branches, or openings issues out, sloping downwards, and this serves as a kind of sink or drain to the whole family, where the moisture of the place is drawn away. The other branch, on the contrary, slopes upwards, and this serves for their door, by which to go out and in. As this is a work of great labour, so it is undertaken by all together; some cut the finest grass, others gather it, and others take their turns to drag it into their hole. Upon this occasion, one of them lies on its back, permits the hay to be heaped upon its belly, keeps its paws upright to make

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greater room; and in this manner, it is dragged by the tail, hay and all, to their common retreat. Whenever they venture abroad, one is placed as a sentinel, sitting upon a lofty rock, while the rest amuse themselves in playing along the green fields, or are employed in cutting grass, and making hay for their winter's convenience. Their trusty sentinel, when an enemy, a man, a dog, or a bird of prey, approaches, apprizes its companions with a whistle, upon which they all make home, the sentinel himself bringing up the rear.

The inhabitants of the country where they chiefly reside, when they observe the hole, generally stay till winter, before they think proper to open it; for if they begin too soon, the animal awakes, and, as it has a surprising faculty of digging, makes its hole deeper in proportion as they follow.

THE LEMING.

This extraordinary animal is about the size of a common rat. It is covered with thin hair of various colours. The eyes are little and black, and the ears inclining towards the back, the hind-legs are longer than those before, which gives it a great degree of swiftness. But it is much more remarkable for its amazing fecun-

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dity and extraordinary migration, than for its figure.

In these expeditions which take place after long continued rain, these animals set forward from their native mountains, in a troop of several millions, and cover the whole plain with their numbers. They move, for the most part, in a square, marching forward by night, and lying still by day. Thus like an animated torrent, they are often seen more than a mile broad covering the ground, and that so thick that the hindmost touches his leader. It is in vain that the poor inhabitant resists or attempts to stop their progress, they still keep moving forward; and, though thousands are destroyed, myriads are seen to succeed and make their destruction impracticable. Wherever their motions are turned, nothing can stop them; they go directly forward. If a lake or river happens to interrupt their progress, they all together take the water and swim over it; a fire, a deep well, or a torrent does not turn them out of their straight lined direction; they boldly plunge into the flames, or leap down the well, and are sometimes seen climbing up on the other side. If they are interrupted by a boat across a river while they are swimming, they never attempt to swim round it, but mount directly up it sides; and the boat-men, who know how vain resistance in such a case would be, calmly suffer the living torrent to pass over, which it does without fur-

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ther damage. If they happen to pass through a meadow, they destroy it in a very short time, and give it the appearance of being burnt up and strewed with ashes.

Enemies so numerous and destructive would quickly render the countries where they appear, utterly uninhabitable, did it not fortunately happen, that the same rapacity that animates them to destroy the labours of mankind, at last impels them to destroy and devour each other. After committing incredible devastations, they divide into two armies, and fight with deadly hatred. The two divisions, however, continue their engagements and animosity until one party overcomes the other. What becomes of either the conquerors or the conquered, is not known. It is probable however, that having devoured every thing else, they then fall to devouring each other; and having habituated themselves to that kind of food, continue it.

As to the rest, the males are larger or more beautifully spotted than the female. They are extremely prolific: and what is extraordinary, their breeding does not hinder their march; for some of them have been observed to carry one young one in their mouth, and another on their back. The Swedes and Norwegians, consider an invasion from those vermin as a terrible visitation; but the Laplanders, are never so happy as when an army of Lemings come down among them; for then they feast upon their flesh. They are

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glad of their arrival also upon another account, for they always expect a great plenty of game the year following, among those fields which the Lemings have destroyed.

THE BEAVER.

The Beaver forms one of that class of animals which are called amphibious, that is, capable of living both on land and in water; all such, however, we find are more attached to the water, and generally make for it, when pressed by any danger.

The Beaver is the only creature, among quadrupeds, that has a flat broad tail, covered with scales, which it uses as a rudder in the water. Its toes are webbed, which enables it to swim with great facility. It is about nine feet long, and near one foot high; it is found in the Northern parts of Europe, Asia, and America, but it is chiefly in the latter, where it has been least disturbed, that its instincts are most strongly

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marked, where they erect habitations with wonderful ingenuity and regularity; they cut, with surprising ease, large pieces of wood, which they drive into the ground, at a small distance one from the other, filling up the interstices with clay. Having thus formed a dam against the violence of the stream, they next construct their apartments, the inside of which they plaister with great neatness, then they bring forth their young and live in families; and here also they lay up wood, cut into billets of convenient size, for their consumption. These stores are larger or smaller, in proportion to the number in family. The logs are not thrown up in one continual pile, but laid one across the other, as chandlers pile the bars of soap, in order to take out, with the greater facility, just such a quantity as they shall want for their immediate consumption, and those parcels only, which lie at the bottom in the water, and have been duly steeped. This timber is cut again into small particles, and conveyed to one of their largest lodges, where the whole family meet, to consume their respective dividends, which are made impartially, in even and equal portions.

Such as are used to hunt these animals, know perfectly well, that green wood is much more acceptable to them than that which is old and dry: for which reason they plant a considerable quantity of it round their lodgments; and as they come out to partake of it, they either catch them

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in snares, or take them by surprise. In the winter, when frosts are very severe, they sometimes break a large hole in the ice; and when the Beavers resort thither for the benefit of a little fresh air, they either kill them with their hatchets, or cover the opening with a large substantial net. After this, they undermine and subvert the whole fabric: whereupon the Beavers, in hopes to make their escape in their usual way, fly with the utmost precipitation to the water; and plunging into the aperture, fall directly into the net, and are inevitably taken.

THE OURANG OUTANG.

The Ourang Outang or Wild Man of the Woods, has a body covered with hair, its appearance altogether resembles the human, it

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walks erect, and is said to construct a hut to shelter it from the weather.

That of Tyson was a gentle, fond, harmless, creature. In its passage to England, those that it knew on ship-board, it would embrace with the greatest tenderness, opening their bosoms, and clasping its hands about them. Monkeys of a lower species it held in utter aversion; it would always avoid the place where they were kept in the same vessel; and seemed to consider itself as a creature of higher extraction. After it was taken, and a little used to wear clothes, it grew very fond of them; a part it would put on without any help, and the rest it would carry in its hands to some of the company, for their assistance. It would lie in a bed, place its head on a pillow, and pull the clothes upwards as a man would do

That which was seen by Edwards, and described by Buffon, shewed even a superior degree of sagacity. It walked, like all its kind, upon two legs, even though it carried burthens. Its air was melancholy, and its deportment grave. Unlike the baboon or monkey, whose motions are violent and appetites capricious, who are fond of mischief, and obedient only from fear; this animal was slow in it motions, and a look was sufficient to keep it in awe. I have seen it, says Mr. Buffon, give its hand to show the company to the door; I have seen it sit at table, unfold its napkin, wipe its lips, make use of the spoon and

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the fork to carry the victuals to its mouth, pour out its drink into a glass, touch glasses when invited, take a cup and saucer and lay them on the table, put in sugar, pour out its tea, leave it to cool before drinking, and all this without any other instigation than the signs or the command of its master, and often of its own accord. It was gentle and inoffensive; it even approached strangers with respect, and came rather to receive caresses than to offer injuries. It was particularly fond of sugared comfits, which every body was ready to give it; and, as it had a defluxion upon the breast, so much sugar contributed to increase the disorder, and shorten its life. It continued at Paris but one summer, and died in London. It eat indiscriminately of all things, but it preferred dry and ripe fruits to all other aliments. It would drink wine, but in small quantities, and gladly left it for milk, tea, or any other sweet liquor.

THE BARBARY APE.

Buffon distinguishes this species by the name of the magot. It seems to connect the Ape family with the Baboons: having a small protuberance on its rump, resembling the rudiments of a tail; while the face is peculiarly prominent, and resembles that of a quadruped rather than of a man. The body is covered with a dull

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greenish hair, inclining to brown; the belly is like the human, and the posteriors bare. It commonly grows to the height of four feet; and is a native of Africa.

In proportion as Apes recede from the human figure, they become more dull, vicious, and intractable. This species is frequently exhibited in Europe: where it is taught to perform a number of tricks, and acquires, from impulse of fear, a degree of sagacity; but in its native haunts it is unamiable in all its manners; frequently assembling in troops, and robbing the women going to market of their baskets of provisions.

THE GREAT BAT OF MADAGASCAR.

This formidable animal is nearly four feet broad when its wings are expanded, and about one foot long. It is a native of Guinea, Madagascar, and (according to Captain Cook) of

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most of the newly-discovered islands in the South Sea.

These bats assemble in prodigious numbers: sometimes by day, (when they darken the air,) as well as by night; and indiscriminately devour the fruits of the earth, animal flesh, or whatever they can seize. Scarcely any thing is secure from their depredations: and it is very probable, as Buffon remarks, that the ancients borrowed their ideas of harpies from these fierce and voracious creatures; for, like those fabled beings, they are deformed, greedy, uncleanly, and cruel. They make a frightful noise in the forest during the night, but at the approach of day, generally seek for quiet and concealment.

They are believed to be extremely fond of human blood, which they suck from persons when asleep. It is not unlikely, indeed, that all bats have a partiality for this kind of nourishment; but the following species seems to be the most dexterous and terrible in this respect.

VAMPIRE, OR SPECTRE BAT.

Though this animal is less formidable in its appearance, it is much more mischievous than the preceding. It is a native of South America, where it lies in palm-trees; according to Ulloa, it leaves its retreat towards the close of the day, and covers the towns and cities in countless multitudes like a lofty and extensive canopy. It is then the common pest of men and animals;

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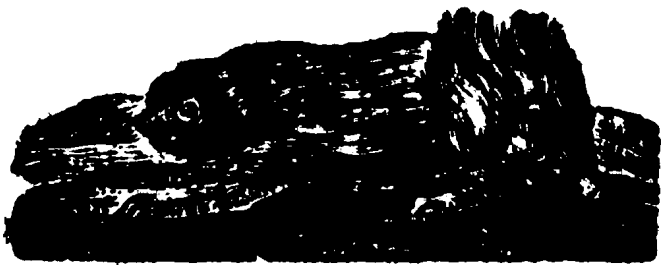
destroying every thing that has life, which it finds asleep and exposed to the air.

Persons attacked by this blood-thirsty creature, have sometimes passed from a sound sleep to a state of death. It dexterously insinuates its sharp-pointed tongue, unperceived, into a vein, and sucks the blood till it is satiated: at the same time, fanning and agitating the air with its wings; the effect of which motion, in hot climates, lulls the sufferer into a more profound sleep. It is therefore highly dangerous for the traveller to sleep abroad; or even, if under shelter, to leave any entrance unsecured, by which the Vampire can be admitted. It does not, however, confine its attacks to the human race: for M. de Condamine assures us, that in certain parts of South America, these bats have destroyed all the cattle that were introduced thither by the missionaries, for the purpose of forming a settlement.



THE SLOTH.

The Sloth is about the size of a badger. Its fur is coarse and irregularly set; its tail is a mere stump; and its mouth extends from ear to ear.

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The nose is blunt, the eyes are black and heavy, and the ears small; the legs are thick, and awkwardly placed; so that it can move only one of them at a time, and it requires an hour to advance three yards..

It inhabits the eastern coast of South America, and is likewise found in Ceylon and India. It subsists wholly on vegetable food, particularly the leaves and bark of trees. Having by the most laborious exertions ascended a tree, it remains there till it has stripped it of every thing that can be eaten: it then rolls itself into a ball; and to save the trouble of gradual descent, falls on the ground with a painful scream. Here it lies for an hour, apparently in a state of insensibility. On recovering, it prepares to climb some other tree; at every motion, uttering a plaintive and melancholy cry, which seems to be ordained by Providence as a principal means of its protection, beasts of prey always flying from the sound of its voice.

Were we to judge of the happiness of this animal from our own sensations, we should be tempted to pronounce it most unfortunate; but it has probably enjoyments peculiar to itself. Its indolence may be bliss, and its deformity is certainly a source of security. A single tree will furnish it with subsistence for a fortnight, and therefore it has plenty, without much labour in searching for it. At the same time that it is very little delicate in the choice of food, it is capable of supporting great abstinence; and

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has been known to subsist forty days successively, without any nourishment whatever. As it would be impossible for a creature of such imperfect conformation to find water, nature has indulgently taken care that it shall experience no inconvenience from the want of it. Thus, balancing its advantages and disadvantages, though one of the most unsightly of animals, it is, perhaps, far from being miserable.

THE PORCUPINE.

The common Porcupine is about two feet long, and fifteen inches broad. It has a long crest on the back of its head, composed of stiff bristles reclining backwards. The body is covered with quills, from ten to fourteen inches long, sharp pointed, and thickest in the middle, and these are varied with black and white; between them a few hairs are interspersed. The head, belly, and legs, are covered with strong bristles,

terminated with dusky coloured hair; the whiskers are long; the ears resemble the human, as the nose does that of the hare. There are four toes before, and five behind; and the tail, which is short, is covered with bristles.

The quills of the Porcupine, which appear to have been given it rather for defence than annoyance, naturally recline backwards; but, when irritated, it erects them, and thus opposes an almost unapproachable circle of lances against every assailant. It has been said that it can hurl or project them like darts against a foe; but this is no more probable than that an enraged turkey-cock should have the power to dart its feathers.

This animal, according to some, lives on roots, fruit, and vegetables; while others affirm, that it hunts for serpents and other reptiles as its subsistence. There is some reason to believe this last statement; or perhaps both are true in a certain degree.

The Porcupine has sometimes been domesticated in Europe, and has been known to live to the age of twelve or fifteen years. Only a single young one is produced at a time. The Indians hunt it for the flesh and the quills; which latter they dye of various colours, and work them up into baskets, belts, and other ornaments, with peculiar elegance.

The Porcupine is a native of many parts of Asia, and of Africa in general; and it is even

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found wild in Italy, though not indigenous in Europe. It is a dull and torpid creature; voracious, though capable of great abstinence: and has received the epithet of fretful, from its bristling up its quills on the slightest appearance of danger.

THE GREAT ANT-EATER.

A particular description of this species may serve to give a competent idea of all the rest. In the Leverian Museum was a specimen upwards of seven feet long, and about two feet high. The tongue is thirty inches long; the nose, or snout, is long and slender; and the eyes are small and black, mixed with gray; and generally about six inches long. A black line bounded with white, extends from the neck across the shoulders to the sides; and the tail is covered with long, coarse, black hair.

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When they discover an Ant-hill, they approach it slowly and silently; and having taken a favourable position, stretch out their long gluey tongue across the path of the Ants. As soon as a sufficient number have overspread the tongue, they draw it into their mouth; repeating the process till their hunger is satiated, when they again retire to their lurking-places.

Though the Ant-eater avoids all its enemies with diligent care, and never provokes a combat with other quadrupeds, yet, when closely attacked, it will defend itself against the dog, and even the Jaguar, by means of its claws, with the most resolute animosity. In short, wherever it fixes, it never relinquishes its hold while it has life.

This animal is a native of Brazil and Guinea. The female brings forth but a single young one at a time, and on these occasions proves extremely fierce when provoked. The flesh of the Ant-eater, though rank and unpalatable to Europeans, is highly prized by the Indians.

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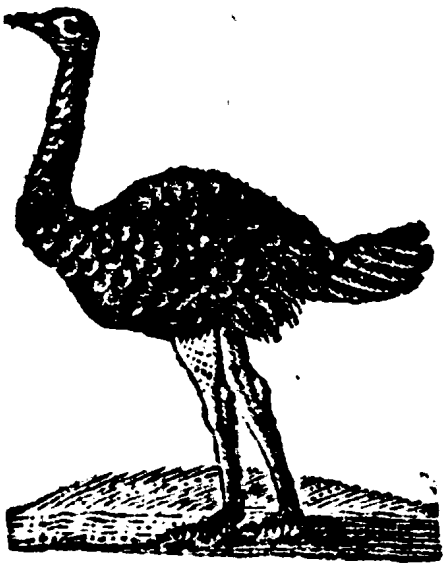
NATURAL HISTORY.

BIRDS.



THE OSTRICH.

In beginning with the feathered tribe, the first animal that offers, seems to unite the class of quadrupeds and birds in itself. In appearance, the Ostrich resembles the Camel, and is the largest of all birds.

It is a native only of the torrid regions of Africa, and seems formed to live among the

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sandy and burning deserts, where there are few vegetables to clothe the surface of the earth, and where the rain never comes to refresh it. There is no region, how barren soever, but is capable of supplying these animals with provisions; leather, grass, hair, iron, stones, or any thing that is given.

In the northern parts of Africa, the season for laying their eggs is about the beginning of July; in the south, it is about the latter end of December. These birds are very prolific, and lay generally from forty to fifty eggs at one clutch. Contrary to the usual opinion, that the female deposits them in the sand, and leaves them to be hatched by the heat of the climate, she always carefully broods over them by night, when the air might chill them, and it is even asserted, that the male and female take this office by turns. After their young are excluded from the shell, they are not able to walk for several days. During the whole of this time, the old ones are very assiduous in supplying them with grass, and very careful to defend them from danger; nay, they encounter every danger in their defence.

The beauty of a part of their plumage, particularly the long feathers that compose the wings and tail, is the chief reason, that man has been so active in pursuing this harmless bird to its deserts, and hunting it with no small degree of expense and labour. The ancients used those

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plumes in their helmets; the ladies of the east make them an ornament in their dress; and among us, they are used for the same purpose of ornament. Those feathers which are plucked from the animal while alive, are much more valued than those taken when dead, the latter being dry, light, and subject to be worm eaten.

For hunting the Ostrich, the Arabians train up their best and fleetest horses, and hunt the Ostrich still in view. As soon as the hunter comes within sight of his prey, he puts on his horse with a gentle gallop, so as to keep the Ostrich still in sight; yet not so as to terrify him from the plain into the mountains. Of all known animals that make use of their legs in running, the Ostrich is by far the swiftest: upon observing himself therefore pursued at a distance, he begins to run, at first, but gently; either insensible of his danger, or sure of escaping. In this situation, he somewhat resembles a man at full speed; his wings, like two arms, keep working with a motion correspondent to that of his legs: and his speed would very soon snatch him from the view of his pursuers, but, unfortunately for the silly creature, instead of going off in a direct line, he takes his course in circles; while the hunters still make a small course within, relieve each other, meet him at unexpected turns, and keep him thus employed, for two or three days together. At last, spent with fatigue and famine, and finding

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all power of escaping impossible, he endeavours to hide himself from those enemies he cannot avoid, and covers his head in the sand, or the first thicket he meets. Sometimes, however, he attempts to face his pursuers; and though in general, the most gentle animal in nature, when driven to desperation, he defends himself with his beak, his wings, and his feet. Such is the force of his motion, that a man would be utterly unable to withstand him in the shock.

They have also another method of taking this bird; they cover themselves with an Ostrich's skin, and passing up an arm through the neck, thus counterfeit all the motions of this animal. By this artifice they approach the Ostrich, which becomes an easy prey. He is sometimes also taken by dogs and nets: but the most usual way is that mentioned above.

There are others who, more compassionate or more provident, do not kill their captive, but endeavour to tame it, for the purpose of supplying those feathers, which are in so great request. The inhabitants of Dara and Lybia breed up whole flocks of them, and they are tamed with very little trouble. But it is not for their feathers alone that they are prized in this domestic state; they are often used as horses. Moore assures us, that at Joar, he saw a man travelling upon an Ostrich; and Adanson asserts, that, at the factory of Podore, he had two Ostriches, which were then young, the strongest

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of which, ran swifter than the best English racer, although he carried two Negroes on his back. As soon as the animal perceived itself thus loaded, it set off running with all its force, and made several circuits round the village; till at length the people were obliged to stop it, by barring up the way.

THE EAGLE.

The royal Eagle is a bird of great beauty, having an elegantly varied plumage, and com manding appearance. Its size is double that of the common Eagle, being in general three feet long, and weighing above twelve pounds. It flies with majestic rapidity; and, such is the expanse of its wings, that it sometimes strikes and kills its prey with them, before it touches it with its claws. Its strength is such as to enable it to tear in pieces, in an instant, the largest sheep; and it pursues, indiscriminately, all kinds of wild animals. Its general residence is on lofty mountains, and it builds its nest on the most inaccess-

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the cliffs, employing in the construction the bones of the animals it has slaughtered, and some dry branches of trees; the materials are large enough to fill the body of a cart.

This fierce animal may be considered among birds as the lion among quadrupeds. They both exercise sovereignty over their fellows of the forest. Equally magnanimous, they disdain smaller plunder and only pursue animals worthy of the conquest. The Eagle also disdains to share the plunder of another bird; and rejects what he has not acquired by his own pursuit. How hungry, soever, he may be, he never stoops to carrion; and when satiated, he never returns to the same carcases. Solitary, like the lion, he keeps the desert himself alone; it is as extraordinary to see two pair of Eagles in the same mountains, as two lions in the same forest.

An instance is recorded, in Scotland, of two children being carried off by Eagles; but fortunately, they received no hurt by the way; and the Eagles being pursued, the children were restored unhurt, out of the nests, to the affrighted parents.

The Eagle is thus at all times a formidable neighbour; but particularly when bringing up its young. It is then, that the female, as well as the male, exert all their force and industry to supply their young. Smith, in his History of Kerry, relates, that a poor man in that country, got a comfortable subsistence for his family,

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during a summer of famine, out of an Eagle's nest, by depriving the Eagles of the provision, which was plentifully supplied by the old ones. He prolonged their assiduity beyond the usual time, by clipping the wings, and retarding the flight of the young; and very probable, also, by so tying them as to increase their cries, which is also found to increase the parent's despatch to procure them food. It was lucky, however, that the old Eagles did not surprise the countryman as he was thus employed, as their resentment might have been dangerous.

It happened some time ago, in the same county, that a peasant resolved to rob the nest of an Eagle, that had built in a small island, in the beautiful lake of Killarney. He accordingly stripped, and swam in upon the island, while the old ones were away; and, robbing the nest of its young, he was preparing to swim back, with the Eagles tied on a string; but, while he was yet up to his chin in the water, the old Eagles returned, and, missing their young, quickly fell upon the plunderer, and in spite of all his resistance, dispatched him with their beaks and talons.

There is a curious anecdote recorded, in the life of De Thou the historian, which shews, that the address of man has succeeded in making even the eagle subservient to his wants. He and another were travelling through a part of France, where they were entertained for some

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days, at the house of a certain nobleman. At the first repast, it was observed, with some surprise, that all the wild fowl or game brought to table, wanted either a head, a wing, a leg, or some other part, which occasioned their host pleasantly to apologize for the voracity of his caterer, who always took the liberty of first tasting what he had procured, before it was brought to table. On perceiving the increased surprise of his guests, he informed them, that in the mountainous regions of his district, the Eagles were accustomed to build their eyries or nests, among the almost inaccessible rocks, which can only be ascended with ladders and grappling-irons. "The peasants," says he, "when they have discovered a nest, raise a little hut at the foot of a rock, in which they screen themselves from the fury of the birds, when they convey provision to their young, which the male carefully nourishes for the space of three months. While the young continue in the nest, the parents ravage all the country, and convey to the nest, capons, chickens, ducks, lambs, kids, pigs, &c.; but the fields and woods supply them with the game; when, therefore, the shepherds perceive that the Eagles have left the nest, they plant their ladders, climb the rocks, and carry off what the Eagles have conveyed to the young, leaving instead, the entrails of animals or other offal; but as this cannot be done so expeditiously as to prevent the young Eagles from devouring a

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part of what has been brought them, it follows that it is generally mutilated; in recompense, however, for this disadvantage, it has a much finer flavour than any thing the markets can afford."

THE VULTURE.

The chief of the Vulture tribe is undoubtedly the Condor. It is a native of many parts of South America, but is more frequently seen in Peru than elsewhere. Some authors have affirmed, that it is capable of snatching up and carrying off boys of ten years of age, and Ulloa states, that he once saw one flying away with a lamb betwixt its claws; which, however, it dropped, scared by the Indians, who at the cries of the boys, and the barking of the dogs, were running towards the place.

We have a very circumstantial account of this amazing bird, by another traveller, who has

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accurately described it:—"In the valley of Ilo, in Peru, I discovered a Condor, perched on a high rock, before me: I approached within gun shot and fired; but as my piece was only charged with swan-shot, the lead was not able sufficiently to pierce the bird's feathers. I perceived, however, that it was wounded; and it was with a good deal of difficulty that it flew to another rock, about five hundred yards distance, on the sea-shore. I therefore charged again with ball, and hit the bird under the throat, which made it mine. I accordingly ran up to seize it: it defended itself upon its back, with its claws extended against me, so that I scarcely knew how to lay hold of it. Had it not been mortally wounded, I should have found it no easy matter to take it; but I at last dragged it down from the rock, and with the assistance of one of the seamen, carried it to my tent, to make a coloured drawing.

"The wings of this bird, which I measured very exactly, were twelve feet three inches, from tip to tip. The great feathers, that were of a beautiful shining black, were two feet four inches long. The thickness of the beak was proportionable to the rest of the body; the length about four inches; the point hooked downwards, and white at its extremity: and the other part was of a jet black. The claws were in the same proportion; and the legs were covered with black scales; as also the toes; but in these the scales were larger."

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Another animal of the Vulture kind is the Lammer-geyer, or lamb Vulture of the Alps. It is an animal of extraordinary ferocity, and undoubtedly the largest of the European Vultures. It inhabits the highest mountains of Switzerland, where it would seem, that the excessive cold has the same power of sharpening its cruel disposition, that the extreme heat has upon the lion and tiger of Africa. The Lammer-geyer commits frequent depredations upon the flocks that pasture in the valleys, and its amazing strength enables it to carry off even the largest dogs, and often full grown goats to its nest. A remarkable escape is mentioned of a hunter, who had followed the shamois or wild goat, to a great distance in the mountains, and meeting with a Vulture had fired at and killed it. Anxious, after this exploit, to secure the young ones, which he saw above him, he took off his shoes and climbing a very steep mountain, where he could scarcely find room to place his feet; he was in the act of stretching out his left arm, above his head, to seize the nest, when the female pounced upon him from a great height, and fixing her talons in his uplifted arm, she plunged her beak into his side: nothing could be more dangerous than his situation, he was leaning with his back to the rock, but his attitude was painful, and his footing so insecure, that the slightest motion of his body would have caused him to lose his balance, and to fall to the bottom

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of the precipice. He preserved however, his presence of mind; with the hand that was disengaged, he placed his gun between his legs, directed the muzzle against the animal which still remained fastened to his side, and pulling the trigger with his great toe, lodged the contents in its body. Never, indeed, was an escape more providential; for in addition to the danger of being dashed to pieces when the bird assailed him, it required several months to heal the wounds which were inflicted by its beak and talons.

It has been wisely remarked, that nature does not create any thing in vain, and the Vulture, notwithstanding its fierce disposition, its foul appetite for carrion, and its offensive smell, is a striking instance of its truth. Mischievous as they are, in a few instances, yet by the wise and beneficent dispensations of PROVIDENCE, they are in those hot countries, where putridity takes place a few hours after death, a blessing to mankind, by cleaning away those carcases of animals, which would cause a plague by their stench. In other places, also, they make full recompense, by lessening the number of those destructive animals the alligators, which would otherwise become intolerable from their multitudes. During the season in which they lay their eggs, the Vultures will sit in the leaves of the trees, watching the coming of the female alligator to deposit its eggs, who then covers them with sand to secure them,

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as she imagines, from all danger; but no sooner does she retire into the water, than the birds dart on the spot, and with claws, wings, and beaks, tear away the sand, and devour the contents of the whole depository.

THE FALCON.

It serves in no small degree, to shew how much Europe has advanced in civilization, that falconry, which is a cruel sport, is practised only in that part of Europe, where ignorance most prevails. Man has obtained the Divine permission to kill the inferior animals for his safety, food, or convenience; but it may well be doubted, whether we do not abuse that privilege, in destroying them for our amusement.

In former times, our ancestors used to take great pleasure in the diversion of hawking, indeed so universally was this amusement indulged in, that a gentleman of high birth scarcely ever appeared abroad without his hawk. In most parts of Europe, however, Poland perhaps excepted, it has given way to the more certain service of the gun. The bird chiefly used for this purpose, was the Gyr-Falcon, a brief description of which we shall proceed to give.

The Gyr-Falcon exceeds all others of his kind in size; for he approaches nearly to the magnitude of an eagle. The courage of this animal is such, that no bird can terrify it; its swiftness

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so great, that scarcely any can overtake it; and its docility so remarkable, that it will obey not only the commands, but even the signs of its master. It remains quietly perched upon his hand, till its game is flushed, or else keeps hovering over his head, without ever leaving him till he gives permission. When he is seen flying wild, the birds of every kind fly with screams at his most distant appearance, and long before the Falcon is within the range of human sight, they endeavour to avoid him with the utmost signs of terror.

The flight of a strong Falcon is wonderfully swift. It is recorded, that a Falcon flew out of Westphalia into Prussia in one day, a distance of about 160 miles; and in the county of Norfolk, in England, a hawk has made a flight at a woodcock, thirty miles in an hour.

Spallanzani informs us, that whilst in Sicily, he amused himself with breeding up three young Falcons. They were so well tamed, that, after straying about, for the whole day, among the neighbouring hills and plains, they punctually returned every evening, to the house of their benefactor, in which they had been bred: they regularly demanded their food, and then went to roost on a tall oak, which grew near. Early every morning, they waked him by their cries, and by beating against the windows; never departing till they had been fed. Many came on purpose to witness this extraordinary scene, and undoubtedly, notwithstanding what we hear

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already related of falconry, it was a very curious thing to see the three birds, which were in a state of perfect liberty, descend from an amazing height in the air at the voice of their master, perch on his hand, and receive his caresses, without being in the least intimidated by the crowd of spectators. Yet this confidence, perfect as it was, did not last for any long time. When the time arrived in which their natural instinct began to appear, and to render them industrious, they no longer appeared at the windows, even when earnestly called. They still, however, retained so much of their early attachment as to come and roost on their accustomed oak, but after a certain time, even this faint appearance of familiarity was gradually lost, and they betook themselves to the natural habits of their wild kindred.

THE SHRIKE, OR BUTCHER BIRD.

The greater Butcher bird is about as large as a thrush; its bill is black, an inch long, and hooked at the end; this, together with its feeding upon flesh, ranks it among the rapacious birds.

Indeed its habits seem to correspond with its conformation, as it is found to live as well upon flesh as upon insects. This bird, therefore, leads a life of continual warfare, and as from its size it does not much terrify the smaller birds of the forest, so, it very frequently meets those, who are

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willing to try its strength, and it never declines the engagement.

It is wonderful to see with what intrepidity this little creature goes to war with the pie, the crow, and the kestril, all above four times bigger than itself, and that sometimes prey upon flesh in the same manner. It not only fights upon the defensive, but often comes to the attack, particularly when the male and female unite to protect their young. At that season, they do not wait the approach of their invader; they sally forth with loud cries, wound him on every side, and drive him off with such fury, that he seldom ventures to return to the charge. In these disputes, they generally come off with the victory; though it sometimes happens that they fall to the ground with the bird they have so fiercely fixed upon, and the combat ends with the destruction of the assailant as well as the defender.

When this bird sees a locust, a mantis, or a small bird, it springs upon it, seizes the little animal in a particular manner by the throat, and soon kills him, after which, it immediately carries off the body in order to impale it on a thorn, and is so dexterous in this operation, that the thorn always passes through the head of the bird or insect thus transfixed. If it cannot find a thorn, it fixes the head of the animal between a division of two small branches, and this, with as much address, as if performed by human means. The instinct

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of spitting the dead birds, is to enable him the better to pull them to pieces: for he has not that degree of strength in his claws to hold them as a hawk does, and pull them with his bill; but being fast spitted, he has strength enough to dissect them. Every animal which it seizes, undergoes exactly the same process, and it thus continues to commit fresh murders all the day long, actuated, as would appear, by a desire of mischief, rather than the necessity of food, it being impossible for it to consume the whole of what it collects.

THE OWL.

The Owl may be considered as a robber, who takes advantage of the darkness to execute his scheme of plunder.—He is distinguished from all other birds by seeing more perfectly in the night than during the day; he therefore keeps concealed, while it is light, not venturing forth in pursuit of his prey till the dusk of the evening, when he may be seen skimming up and

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down the hedges after small birds, quadrupeds, and insects.

Nor are these birds by any means silent; they have an hideous note; which being frequently heard in the still night, disturbs the general tranquillity in a very disagreeable manner. Indeed, the prejudices of mankind are united with their sensations, to make the cry of the Owl unpleasant. The screech Owl's voice was always considered as a presage of some sad calamity that was soon to ensue.

But this is no longer the case, except with the most ignorant: indeed it is one of the great advantages resulting from education, that, according as the labouring class of a country become better instructed, their own good sense shews them at once, the absurdity of these ideas, whilst it prevents their being again misled by similar errors.

When their pursuit has been successful, they soon return to their solitude, or to their young, if that be the season. If, however, they find but little game, they continue their quest so long, that broad day breaks in upon them, and leaves them dazzled, bewildered, and at a distance from home.

In this distress, they are obliged to take shelter in the first tree or hedge that offers, there to continue concealed all day, till the returning darkness once more supplies them with a better plan of the country. But it often hap-

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pens, that, they are spied out by the other birds of the place, in which case they are sure to receive no mercy.

These increase their cries and turbulence round him, slap him with their wings, and are ready to shew their courage to be great, as they are sensible that their danger is but small. The bewildered Owl, not knowing where to attack, or where to fly, patiently sits and suffers all their insults.

It sometimes happens, however, that the little birds pursue their insults until evening returns; which restoring him his faculties of sight once more, he makes the foremost of his pursuers pay dear for their former sport.

Though Owls are no favourites with mankind, they are not without utility.—The Barn Owl in particular may be reckoned among the benefactors of mankind, being more serviceable about a farm-yard than half a dozen cats. "In the year 1580," says an English writer, "at Hallontide, an army of mice so overran the marshes near Southminster, that they eat up the grass to the very roots. But, at length, a great number of strange Owls came, and devoured all the mice. The like happened again in Essex, about sixty years after."

THE WOODPECKER.

In every part of the world the Woodpecker is to be found; and the wisdom of Providence

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in adapting the form of animals to their respective situations, cannot be better illustrated than by describing its peculiar conformation. Woodpeckers live entirely upon the insects contained in the body of trees; and for this purpose are furnished with a straight, hard, strong, angular and sharp bill, made for piercing and boring. The tongue is of a very great length; round, ending in a sharp, stiff, bony horn, toothed on each side, to strike ants and insects when dislodged from their cells. The legs are short and strong, for the purpose of climbing. The toes stand, two forward, and two backward; in order that it may hold by branches of trees, and it has a hard stiff tail to lean upon, when climbing.

When a Woodpecker finds out a rotten hollow tree, where there are worms, ant's eggs, or insects, it immediately prepares for its operations.

Resting by its strong claws, and leaning on the thick feathers of its tail, it begins to bore with its sharp strong beak, until it discloses the whole internal habitation. Upon this, either through pleasure at the sight of its prey, or with a desire to alarm the insect colony, it sends forth a loud cry, which throws terror and confusion into the whole insect tribe. They creep hither and thither, seeking for safety; while the bird luxuriously feasts upon them at leisure, darting its tongue with unerring certainty, and devouring the whole b ood.

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The Woodpecker, however, does not confine its depredations solely to trees, but sometimes lights upon the ground to seek its food in an ant hill. These insects lie generally too deep for the bird to come at, and it is obliged to make up by stratagem the defect of power. It first opens the hill in order to call them abroad, it then thrusts out its long red tongue, which being like a worm, and resembling their usual prey, the ants come out to settle upon it in great numbers; when the bird withdraws its tongue at a jerk, and devours the devourers.

This bird builds its nest in the cavities of trees, and lays five or six eggs. It forms its little house with considerable neatness, but uses neither straw, feathers, nor any other kind of lining. However the Wookpeckers of Guinea and Brazil, suspend their nests from the extremity of the branches of trees, with matchless contrivance and ingenuity, in order to secure their eggs and young from the depredations of monkeys and serpents.

THE GOLDEN THRUSH.

The Golden Thrush, is one of the most beautiful of European birds. Its size is that of the common Thrush, and its colour a very fine bright golden yellow, except the wings and tail, which are black.

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This bird is remarkable for constructing its nest upon a different principle from the generality of European birds, supporting it only by the edge or rim, so that it bears the appearance of a shallow purse or basket. For this purpose, the bird selects the forked extremity of a sound slender branch, and wreathing the two branches of the fork with straws, grasses, or other vegetable fibres proper for the purpose, at length connects the two extremities of the fork, in order to form the verge of the nest; then continuing the straws from the one side to the other, giving the whole a proper depth, and crossing and interweaving them, as the work proceeds, it forms the general basket, which is lined with grass and moss, the silken bags of moths, the egg-bags of spiders, feathers, &c. The young are fed with insects, and particularly with caterpillars. The parents are observed to be uncommonly tender in the care of their young, and have even been known to assault those who disturbed them in their occupation. The Golden Thrush is of a migratory nature, spending the winter in Asia and Africa, and the summer in Europe.

Of this little animal, Dr. Frazer gives a very pleasant description, under the name of the Toddy bird, in his entertaining tracts. "Nature, in the rainy season at Bombay, affords us a pleasant spectacle, as well as matter for admiration: for here is a bird, that is not only exquisitely curious in the artificial composure of its nest

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with hay, but furnished with devices to secure itself and young ones from its deadly enemy, the squirrel, as likewise from the injury of the weather; which, being unable to oppose, it eludes with this artifice: contriving the nest in a most curious manner, with various rooms and passages, before which hangs a penthouse for the rain to pass, tying it with so slender a thread to the bough of the tree, that the squirrel dare not venture his body upon it, yet it is strong enough to bear the hanging habitation of the ingenious contriver, free from the assaults of its enemies and all the accidents of gusts and storms: hundreds of these pendulous nests may be seen on one tree."

THE TAILOR-BIRD.

EQUALLY curious in the structure of its nest, and far superior in the variety and elegance of its plumage, is the Tailor-bird of Hindostan, so called, from its instinctive sagacity in forming its nest: it first selects a plant with large leaves, and then gathers cotton from the shrub, spins it

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to a thread by means of its long bill and slender feet, and then, as with a needle, sows the leaves neatly together to conceal its nest. The Tailor-bird resembles some of the humming birds at the Brazils, in shape and colour; the hen is brown, but the plumage of the cock displays the varied tints azure, purple, green and gold. Nothing can be more interesting than to observe the progress of an industrious pair of tailor birds, from their first choice of a plant, until the completion of the nest, and the exclusion of the young from the shell. How applicable are the following lines to the ingenuity of the Tailor-bird, and the hanging nest of the baya;

Behold a bird's nest!
Mark it well, within, without!
No tool had he that wrought, no knife to cut,
No nail to fix, no bodkin to insert,
No glue to join; his little beak was all:
And yet how neatly finished! What nice hand,
With every implement and means of art,
Could compass such another?

THE BIRD OF PARADISE.

This most elegant bird is about the same size as the thrush, but from the bill to the end of the tail, about twelve inches. The tail is of a very moderate length, but from the upper part of each side of the body, beneath the wings,

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springs a vast assemblage of extremely long, loose, and floating plumes, of a broad lance-shaped form, and of the most delicate texture and appearance. These plumes are, in some specimens, of a bright jonquil yellow, gradually sinking, towards their extremities, into a very pale purplish brown; in others, they are of a paler yellow, and in most, are marked on their upper part, or nearest the body, by a few long dark red or sanguine spots: from the middle of the rump, spring a pair of long slender filaments bearded only at the end, considerably exceeding in length, even the long loose plumes of the sides. These magnificent birds associate in large flocks, and thus flutter through the delightful spring groves of the East India Islands. They are always led by a single bird, which the natives call their king, which is distinguished from the rest, by the superior beauty of his plumage, and by the homage which they pay him. It is pretended, that when this bird settles, the whole flight of Paradise Birds settles also, in consequence of which, they sometimes perish, since if their leader happens to settle on the ground; they are not able to rise on account of the peculiar structure of their feathers; nor can they fly with the wind, which would totally disorder their long flowing plumes; they are, therefore, observed always to fly against the wind, and to abstain altogether from flight during a storm, which would infallibly throw them on the ground. In the Aru

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Islands, they are observed to perch on the highest trees, and particularly on one bearing a red berry, which seems to be their favourite food. They are taken by the inhabitants with bird-lime snares or blunt arrows; and though a great many are thus taken alive, they are immediately killed, embowelled, the feet cut off, then fumigated with sulphur, and dried for sale. We cannot dismiss the history of this elegant bird, without observing, that an instance has occurred of its having been brought into England in a living state; it had, however, entirely lost the beautiful floating side feathers, and did not long survive its arrival.

THE CUCKOO.

This singular bird, which is somewhat less than a pigeon, is shaped like a magpie, and is of a grayish colour. Having disappeared all the winter, it discovers itself in our country, early in the spring, by its well known cry, which is, in fact, the call of the males. From the cheerful voice of this bird, the farmer may be instructed in the real advancement of the year; and the husbandman taught when to sow his most useful seeds, and do such work as depends upon a certain mildness of the air.

Neither here nor in other countries, does the Cuckoo make a nest of its own, but deposits its eggs in that of some other bird, to whom it leaves the care of hatching them and rearing the

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young. A Water-wagtail, or even a hedge-sparrow, frequently acts as nurse to the young Cuckoos, and if they happen to be hatched at the same time with its own offspring, they quickly exclude the latter from the nest. When the young Cuckoo is sufficiently fledged, it soon quits its foster parent and pursues its native propensities. What becomes of the family in winter is not precisely known, it probably migrates to warmer climates, for it is certain, that it cannot exist during the cold weather in this country. The following beautiful ode is very descriptive of its natural history.

Hail, beauteous stranger of the wood,
Attendant on the spring;
Now heaven repairs thy vernal seat,
And woods thy welcome sing.

Soon as the daisy decks the green,
Thy certain voice we hear;
Hast thou a star to guide thy path,
Or mark the rolling year?

Delightful visitant, with thee
I hail the time of flowers,
When heaven is filled, with music sweet
Of birds among the bowers.

The school-boy wandering in the wood,
To pull the flowers so gay;
Starts, thy curious voice to hear,
And imitates thy lay.

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Soon as the pea puts on the bloom,
Thou fly'st the vocal vale,
An annual guest, in other lands,
Another spring to hail.

Sweet bird, thy bower is ever green,
Thy sky is ever clear;
Thou hast no sorrow in thy song,
No winter in thy year.

O could I fly, I'd fly with thee,
We'd make, with social wing,
Our annual visit o'er the globe,
Companions of the spring.

THE HUMMING BIRD.

Of all the birds that flutter in the garden, or paint the landscape, the humming bird is the

most delightful to look upon, and the most inoffensive.

These charming little animals are found to vary, from the size of a small wren to that of an humble bee; and consequently they are the smallest of the feathered race.

It is inconceivable how much they add to the beauty of a rich luxuriant western landscape: as soon as the sun is risen, the humming birds of different kinds, are seen fluttering about the flowers, without ever alighting on them. Their wings are in such rapid motion, that it is impossible to discern their colours, except by their glittering. They are continually in motion, visiting flower after flower, and extracting its honey as if with a kiss; upon this alone they subsist. The motion of their wings brings out a humming sound, from whence they have their name, for whatever divides the air swiftly, must thus produce a murmur.

The colours which adorn this beautiful little bird, are so radiant, that it is only by comparing them with the brilliancy of polished metals and precious stones, that we can give any idea of their peculiar splendour.

These birds suspend their nests from the small branches of different trees with surprising skill, and line them in the most elegant manner; the eggs are two in number, about the size of small peas, and of a snow white colour. At the end of twelve days, the young burst the shell, and at that

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time, are not much larger than the blue-bottle fly. In defence of their offspring, they shew the most admirable courage, flying in the face of any one that attacks their nest, and with such fierceness that no man would believe it that had not seen it.

THE CRANE.

The crane is a tall, slender bird, with a long neck and longs legs. The head is covered with black bristles, and the back of it is bald and red, which sufficiently distinguishes this bird from the stork, to which it is very nearly allied in size and figure. The plumage, is ash-coloured; and two large tufts of feathers spring from the pinion of each wing, bearing resemblance to hair, which the bird can erect and depress at pleasure. Gesner says, that these feathers, in his time, used to be set in gold, and worn as ornaments in caps.

A cold region seems to be this bird's favourite abode. They come down into the more southern parts of Europe, rather as visitants than inhabitants; they have long ceased to frequent the British islands at any season. However, they were formerly known here, and held in great estimation, for the delicacy of their flesh. Their common food is corn, but scarcely any thing comes amiss to their appetite. When the period of their migration arrives, the Cranes are seen preparing to quit Germany, in September; from thence they fly southward by thousands;

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and arrive in Tuscany a short time after. There, they tear up the fields, newly sown, for the grain just committed to the ground, and do great mischief. It is to be supposed that, in the severity of the winter, they go southward still nearer the middle parts of the earth. They again appear in the fields of Pisa, regularly about the 20th of February, to anticipate the spring.

In these journeys, it is amazing to conceive the heights to which they ascend, when they fly. Their note is the loudest of all other birds, and is often heard in the clouds, when the bird itself is entirely unseen.

THE HERON.

The common heron is remarkably light, in proportion to its bulk, scarcely weighing three pounds and a half, yet it expands a breadth of wing, which is five feet from tip to tip. Its bill is very long, being five inches from the point to the base; its claws are long, sharp, and the middlemost toothed like a saw. Yet thus armed as it appears for war, it is indolent and cowardly, except when committing its depredations on fishes, which it devours without mercy. It is a general robber of ponds and lakes, and frequently with instinctive foresight, builds its nest, in places where the stock of fish is artificially kept up, in

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order to gain a better opportunity for subsistence. His method is to wade as far as he can go into the water, and there patiently wait the approach of his prey, which, when it comes within sight, he darts upon with inevitable aim. In this manner, he is found to destroy more in a week, than an otter in three months. "I have seen a Heron," says Willoughby, "that had been shot, that had seventeen carps in his belly at once, which he will digest in six or seven hours, and then to fishing again. Several gentlemen who kept tame Herons, to try what quantity one of them would eat in a day, have found, that a single Heron will destroy fifteen thousand carp in a single half-year."

THE FLAMINGO.

The Flamingo is a tall, bulky, and most beautiful bird. The body, which is of a beautiful scarlet, is about the size of a swan; but its legs and neck are of such an extraordinary length, that when it stands erect, it is six feet six inches high.

This extraordinary bird is now chiefly found in America, but was once known on all the coasts of Europe. Its beauty, its size, and the peculiar delicacy of its flesh, have been such temptations to destroy or take it, that it has long since deserted the shores frequented by man, and

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taken refuge in countries that are as yet but thinly peopled. In those desert regions, the Flamingos live in a state of society, and exhibit more signs of sagacity than any other of the feathered creation.

The Flamingos live near salt-water lakes and swampy islands. They come down to the banks of rivers by day; and often retire to the inland mountainous part of the country, at the approach of night. When seen by mariners in the day, they always appear drawn up in a long close line of two or three hundred together; and as Dampier tells us, present, at the distance of half a mile, the exact representation of a long brick wall. Their rank, however, is broken when they seek for food; but they always appoint one of the number as a watch, whose only employment is to observe and give notice of danger, while the rest are feeding. As soon as this trusty sentinel perceives the remotest appearance of danger, he gives a loud scream, with a voice as shrill as a trumpet, and instantly the whole flock are upon the wing.

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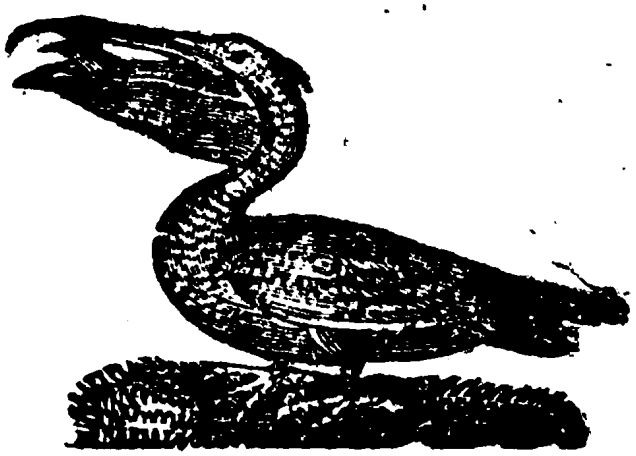

THE PELICAN.

The Pelican of Africa is much larger in the body than a swan, and somewhat of the same shape and colour. Its neck is long, and the toes are all webbed together; the chief peculiarity is in an enormous bill and the great pouch underneath. The former is fifteen inches from the point to the opening of the mouth, which is a good way back behind the eyes. At the base, the bill is somewhat greenish, but varies towards the end, being of a reddish blue. It is very thick in the beginning, but tapers off to the end, where it hooks downwards. The under chap is still more extraordinary; for to the lower edges of it hang a bag, reaching the whole length of the bill to the neck, which is said to be capable of containing fifteen quarts of water. When this bag is empty, it is not seen; but when the bird has fished with success, it is then incredible to what an extent it is often dilated. For the first thing the Pelican does in fishing, is to fill up the

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bag; and then it returns to digest its burden at leisure. Tertre affirms, that it will hide as many fish, as will serve six hungry men.

Such is the formation of this extraordinary bird, which is a native of Africa and America. The Pelican was once also known in Europe, particularly in Russia: but it seems to have deserted our coasts. This is the bird of which so many fabulous accounts have been propagated; such as its feeding its young with its own blood, and its carrying a provision of water for them in its great reservoir, in the desert. But the absurdity of the first account answers itself; and as for the latter, the Pelican uses its bag for very different purposes than that of filling it with water.

Nothing can exceed the indolence and gluttony of the Pelican; it is only from the stimulant of hunger that they are excited to labour; for otherwise, they would continue always in fixed repose. When they have raised themselves about thirty or forty feet above the surface of the sea, they turn their head with one eye downwards, and continue to fly in that posture. As soon as they perceive a fish sufficiently near the surface, they dart down upon it with the swiftness of an arrow, seize it with unerring certainty, and store it up in their pouch. They then rise again, though not without great labour, and continue hovering and fishing, with their head on one side as before.

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Yet, with all the seeming dullness of this bird, it is not entirely incapable of instruction in a domestic state. Father Raymond assures us, that he has seen one so tame and well educated among the native Americans, that it would go off in the morning at the word of command, and return before night with its great paunch distended with plunder; a part of which its master would make it disgorge, and a part he would permit it to reserve for itself.

THE ALBATROSS.

This is one of the largest and most formidable of the equator birds. The body is rather larger than that of the pelican; and its wings, when extended, ten feet from tip to tip. The bill, which is six inches long, is yellowish, and terminates in a crooked point. The top of the head is of a bright brown; and the back is of a darker; and the belly is white.

The albatross is an inhabitant of the warmer countries, and also of the Streights of Magellan, in the South Seas. It preys, as all the gull kind do, upon the wing; and chiefly pursues the flying-fish, that are forced from the sea by the dolphins. The ocean in that part of the world presents a very different appearance from the seas with which we are surrounded. In our

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seas, we see nothing but a dreary expanse, ruffled by winds, and seemingly forsaken by every class of animated nature. But in the tropical seas and in southern latitudes, the sea is all alive with birds and fishes, pursuing and pursued. Every various species of the gull kind are there seen hovering on the wing, at a thousand miles distance from the shore. The flying fish are every moment rising to escape from their pursuers of the deep, only to encounter equal dangers in the air. Just as they rise, the dolphin is seen to dart after them, but generally in vain; the gull has more frequent success, and often takes them at their rise; while the Albatross pursues the gull, and obliges it to relinquish its prey; so the whole scene presents but one living picture of rapacity and evasion.

Few birds float upon the air with more ease than the Albatross, or support themselves a longer time in that element. They seem never to feel the accesses of fatigue; but night and day upon the wing are always prowling, yet always emaciated and hungry.

The Albatross seems to have a peculiar affection for the penguin, and a pleasure in its society. They are always seen to chuse the same places for breeding; some distant, uninhabited island, where the ground slants to the sea. as the penguin is not formed either for flying or climbing. In such places, their nests are seen together, as if they stood in need of mutual assistance and protection.

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THE GANNET, OR SOLAND GOOSE.

The Gannet is of the size of a tame goose, but its wings are much longer. The bill is six inches long, inclining down at the point, and the sides are irregularly jagged, that it may hold its prey with greater security. From the corner of the mouth, is a narrow slip of black bare skin, that extends to the hind part of the head; beneath the skin is another, which like the pouch of the pelican, is dilatable, and of a size sufficient to contain five or six entire herrings, which, in the breeding season, it carries at once to its mate or its young. These birds are extremely numerous in the islands to the north of Scotland, the Skelig islands off the coasts of Kerry: and those that lie in the north sea of Norway, abound with them. But it is in the Bass island in the Firth of Edinburgh, that they are seen in the greatest abundance.

They are not less frequent upon the rocks of St. Kilda. Martin assures us, that the inhabitants of that small island consume annually nearly twenty-three thousand young birds of this species, besides an amazing quantity of their eggs. On these, they principally subsist throughout the year; and from the number of these visitants, make an estimate of their plenty, for that season. They preserve both the eggs and the fowls, in small pyramidal stone buildings, covering them with

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turf ashes, to prevent the evaporation of their moisture.

The gannet is remarkable for the quickness of its sight. It is possessed of a transparent membrane under the eye-lid, with which it covers the whole eye at pleasure, without obscuring the sight in the smallest degree. This seems a necessary provision for the security of the eyes of so weighty a creature, whose method of taking prey is by darting headlong down from a height of an hundred feet and more, into the water, to seize it. These birds are sometimes taken at sea, by fastening a pilchard to a board, which they leave floating. The gannet instantly pounces down from above upon the board, and often burying his bill in the wood, is killed or maimed by the shock of a body where it expected no resistance.

These birds breed but once a year, and lay but one egg, which being taken away, they lay another, if that is also taken, then a third; but never more for that season.

THE SEAGULL.

The distinguishing characters of the Gull are that the bill is long, straight, and crooked at the extremity, the body is light and covered with thick plumage; the wings are large and the

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legs short. Like others of the rapacious kind they lay but few eggs; and hence, in many places, their number is daily seen to diminish. They may at first sight, appear no benefit to mankind; but when we consider how many natives of our islands are sustained by their flesh, either fresh or salted, we shall find no satisfaction in thinking that those poor people may, in time, lose their chief support. The gull, in general, builds on the ledges of rocks, and lays from one egg to three, in a nest formed of long grass or sea-weed. Most of the kind are fishy tasted, with black stringy flesh: yet the young ones are better food; and of these, with several other birds of the penguin kind, the poor inhabitants of our northern islands make their frugal meals.

The method of taking them is very hazardous and extraordinary. The height of some of these rocks is nearly three hundred feet, their faces roughened with shelves or ledges, sufficient only for the birds to rest and lay their eggs. To these, the hardy and fearless native will ascend, collect the eggs and birds, and descend with the same indifference; whilst a stranger, unaccustomed to such climbing, would be inevitably dashed to pieees.

In most places, the attempt is made from above; the fowlers are lowered from the brink by a rope. They trust themselves to a single assistant, who lets his companion down, and holds

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the rope, depending on his strength alone; which often fails, and the adventurer is sure to be dashed to pieces, or drowned in the sea below. The rope is often shifted from place to place, with the weight of the fowler and his game hanging to it! The person above receives signals for the purpose, his companion being far out of sight, who during the operation, by help of a staff, springs from the face of the rocks to avoid injury from the projecting parts.

THE PENGUIN.

The Penguin kind are but ill fitted for flight. Their wings serve them rather as paddles to help them forward, and their legs are still less formed to assist them in walking. Yet no animal can be better adapted for an aquatic life, for they swim and dive with equal celerity and ease.

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As they never visit land, except when they come to breed, their feathers take a colour from their situation. That part of them which has been continually bathed in the water, is white; while their backs and wings are of different colours, according to the different species. They are also covered more warmly all over the body with feathers, than any other birds whatever; so that the sea seems entirely their element; the Magellanic Penguin is the largest and most remarkable of this kind. Its size approaches near to that of a tame goose. It never flies, as its wings are very short. The upper part of the head, back and rump, are covered with stiff black feathers; while the belly and breast, as is common with all of this kind, are of a snowy whiteness. They walk erect with their heads on high, their fin-like wings hanging down like arms; so that to see them at a distance, they look like so many children with white aprons.

They uniformly feed upon fish; and their extreme fatness seems a proof of the plenty in which they live. They dive with great rapidity, and are voracious to a great degree.

They are a bird of society; and especially when they come on shore, they are seen drawn up in rank and file upon the ledge of a rock, standing together with the Albatross as if in consultation. They begin laying, in the month of November. Their preparations for laying are attended with no great trouble, as a small de-

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pression in the earth, without any other nest, serves for this purpose. The warmth of their feathers and the heat of their bodies is such, that the progress of hatching is carried on very rapidly.

THE DUCK.

The tame Duck is a bird so well known, that any description of it is unnecessary. The particular methods, however, of taking wild ducks as practised in England, and also in China, are highly amusing, and well worthy of our attention.

A decoy is always set where there is a large pond surrounded by a wood, and beyond that, a marshy country. The pool, is next to be planted round with willows, for the purpose of shading it on every side. On the south and north side of this pool, are some ditches or channels, made broad towards the pool, and growing narrow till they end in a point. These channels are covered over with nets, so that they form a

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vault or arch, growing narrower and narrower to the point, where each is terminated by a tunnel net, like that in which fish are caught in weirs. The place being fitted in this manner, the fowler is to provide himself with a number of wild ducks made tame, which are called decoys. These are always to be fed at the mouth or entrance of the pipes or channels, and to be accustomed to come at a whistle.

As soon as the evening is set in, the fowler, when he finds a fit opportunity, and sees his decoy covered with fowl, walks about the pool, and observes into what pipe the birds gathered in the pool, may be enticed or driven. Then casting hemp-seed, or some such seed as will float on the surface of the water, at the entrance and up along the pipe, he whistles to his decoy-ducks, who instantly obey the summons, and come to the entrance of the pipe, in hopes of being fed as usual. Thither also they are followed by a whole flock of wild ones, who little suspect the danger preparing against them. The wild ducks, therefore, pursuing the decoy ducks, are led into the broad mouth of the channel or pipe, nor have they the least suspicion of the man, who keeps hidden behind one of the hedges. When they have got up the pipe, however, finding it grow more and more narrow, they begin to suspect danger, and would return back; but they are now prevented by the man, who shews himself at the broad end below. Thither, therefore, they

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dare not return; and rise they may not, as they are kept by the net above from ascending. The only way left them, therefore, is the narrow funneled net at the bottom; into this they fly, and there they are taken.

In Lincolnshire, in England, decoys are commonly let at a certain annual rent, from five pounds to twenty pounds a year; and some even amount to thirty. These principally contribute to supply the markets of London with wild-fowl. The number of ducks, widgeon, and teal, that are sent thither is amazing. Above thirty thousand have been sent up in one season, from ten decoys in the neighbourhood of Wainfleet.

To this manner of taking wild-fowl in England, we subjoin another still more extraordinary, frequently practised in China. Whenever the fowler sees a number of ducks settled in any particular plash of water, he sends off two or three gourds to float among them. These gourds resemble our pompions; but being made hollow, they swim on the surface of the water; and on one pool, there may sometimes be seen twenty or thirty of these gourds floating together. The fowl, at first, are a little shy of coming near them; but by degrees, they grow familiar with them, and amuse themselves by whetting their bills against them. When the birds are as familiar with the gourds as the fowler could

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wish, he then prepares to deceive them in good earnest. He hollows out one of these gourds large enough to put his head in; and, making holes to breathe and see through, he claps it on his head. Thus accoutred, he wades slowly into the water, keeping his body under, and nothing but his head in the gourd above the surface; and, in that manner, moves imperceptibly towards the fowls, who suspect no danger. At last, however, he fairly gets in among them; while they, having been long used to see gourds, take not the least fright while the enemy is in the very midst of them; and an insidious enemy he is; for ever as he approaches a fowl, he seizes it by the legs, and draws it in a jerk under water, where he fastens it under his girdle, and goes to the next, till he has thus loaded himself with as many as he can carry away. When he has got his quantity, without ever attempting to disturb the rest of the fowls on the pool, he slowly moves off again; and in this manner, pays the flock three or four visits in a day.

THE BLUE-BELLIED PARRAKET.

The Blue-bellied Parraket is a very beautiful and richly variegated species, generally measuring about fourteen or fifteen inches in length; the neck, back, and wings, are a deep grass

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green, the under coverts of the wings, beneath the shoulders, are red; the belly fine blue, and the thighs varied with green and yellow.

It is a bird of lively disposition, and may be rendered perfectly familiar and caressing; and contrary to the nature of most birds, which are said to pine in captivity, it has been known to live above a hundred years.

To those who never have had an opportunity of observing the docility and powers of the parrot, what we are about to relate will appear incredible; such, however, as have seen those birds when placed at an open window, in a large town, chattering to the passengers in the street, and endeavouring to imitate the different cries of the hawkers, will readily believe, that more care bestowed on their instruction would make their stock of words greater, and their articulation more distinct.

In modern times we have heard of no bird of this kind, that could rival the celebrated parrot, so many years in the possession of the late Colonel O'Kelly. This parrot was of a beautiful green colour, and had a spot of red on each shoulder. "I saw him," says the Gentleman who gives the account, "in company with eight or ten other strangers. At first, the bird seemed alarmed at the number of people, and was quite sullen. The housekeeper was sent for, and she gradually brought him into good humour, by

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caressing him, talking and singing to him. The first tune he sung was "the Banks of the Dee." He sung several verses of this by snatches, pausing between whiles, as if his memory failed him. The maid then helped him, by going on where he left off, and he took her up, not repeating what she had sung, but going on from her last words. The maid prompted him to sing God save the King. He sang all the verses of it, but now and then wandered into the Banks of the Dee, which seemed his favourite, and one or two Scotch Songs, the names of which I forget. I think, in the whole, he sung six different songs, all with words to them: he did not sing them all entirely through, but seemed as if he could have done it, had he been quite in good humour. Colonel O'Kelly told us, that he knew about twenty songs, and, from what I saw and heard, I could readily believe it. Colonel O'Kelly told us that his power of catching sounds was quite astonishing; that, on one occasion, when a newspaper had been read aloud in his presence, the Colonel, on coming into the room half an hour after, had, as he opened the door, been convinced by the sound, that the same person was still reading aloud; and was scarcely able to believe that it was the Parrot repeating to himself, inarticulate sounds, precisely in the tone and manner of the reader. He also delighted in imitating the puppet-shows then exhibited in the streets.

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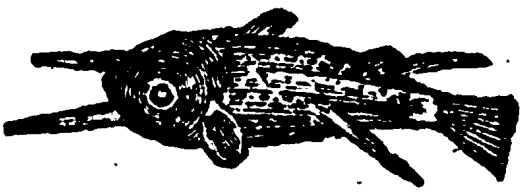
NATURAL HISTORY.

FISHES.



THE SEA UNICORN.

THIS immense fish, which is found in the Northern Seas, measures from 20 to 30 feet in length, exclusive of the weapon or horn in front of its head, which is from five to eight feet long.

Notwithstanding the size and bulk of these animals, they move in their own element with astonishing velocity. The weapon, which projects from their upper jaw, is one of the most formidable that can be imagined; it is as straight

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as an arrow; wreathed in a manner we sometimes see twisted bars of iron; it tapers to a sharp point, and is whiter, heavier, and harder than ivory. It has been known to penetrate even into the solid timbers of a ship; and the body of no animal whatever, is sufficiently hard to resist its effects. Notwithstanding all these appointments for combat, the Sea-Unicorn is one of the most harmless and peaceable inhabitants of the ocean; it is seen constantly and inoffensively sporting among the other great monsters of the deep, no way attempting to injure them, but pleased in their company. Wherever it is seen, the whale is shortly after sure to follow.

THE GREAT WHALE.

The great Whale is believed to be the largest of all living creatures. It usually measures from fifty to a hundred feet in length, and some have been taken of even considerably

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greater length than this. The head, which constitutes nearly a third of the whole bulk, is from fifteen to thirty feet long, and is flattish above. The eyes, which are not larger than those of an ox, are placed in the most convenient situation possible for the animal's seeing round about him. The tail is broad, and of a half moon shape. Whales have no teeth either in their upper or under jaw, but in place of these, the upper jaw is furnished with the horny substance called whalebone. On the top of the head there are two round openings or breathing holes, through which they spout the sea water.

The muscular powers of these animals are so great, that a blow of their immense tail is at any time sufficient to upset a tolerably large boat; and, when struck upon the surface of the ocean, to make the water fly, with a tremendous noise, in all directions. The female Whale, suckles her young for a year, with natural fondness, and will defend them when attacked, with a courage which she never exhibited at any other time.—Indeed, though the Whale is the largest animal we know, it is, perhaps, the most harmless. Instead of preying upon the other large inhabitants of the deep, it appears to subsist solely on marine insects. It is not to be wondered at, if such a pacific animal, should have many enemies to contend against. A small shell fish called the Whale-louse, adheres to its body, and feeds upon its fat; but next to man,

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the Sword-fish is its most formidable foe. Against its adversaries of the deep however, it may prevail, but Man pursues it with successful hostility. Incited by a spirit of enterprize or the laudable wish to supply the necessary wants of human life, it is well known to most readers, that a number of ships are fitted out annually for the Whale-fishery on the coast of Greenland, and in the South Sea. The animal is pierced with a harpoon, to which a long rope is affixed. kept coiled up, and allowed to run off to a great length as it swims away with the spear sticking in its side. As often as the wounded Whale rises to respire, it receives another harpoon, till at last it sinks exhausted with fatigue from the loss of blood. The blubber or fat is then cut up, put into casks, and is afterwards melted into oil. The flesh is of no value according to our taste, but some of the northern nations consider it as a great delicacy: and even a dead Whale thrown on their shores is a blessing from Providence.

Taking the Whale at the ordinary size of eighty feet long, and twenty feet high, what an enormous animated mass must it not appear to the spectator? with what amazement must it strike him, to behold so great a creature gambolling in the deep, with the ease and agility of the smallest animal, and making its way with incredible swiftness? Yet though this be wonderful, perhaps still greater wonders are con-

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cealed in the deep, which man has not had opportunities of exploring.—These large animals are obliged to shew themselves in order to take breath—but who knows the size of those that are fitted to remain for ever under water.

THE DOLPHIN.

The body of the Dolphin is oblong and roundish, and the snout narrow and sharp-pointed, with a broad transverse band, or projection of the skin, on its upper part. It is a longer and more slender animal than the porpoise, measuring nine or ten feet in length, and about two in diameter.

The Dolphins are predatory animals, and pursue with avidity, various species of fish. In some countries, they are known to follow the shoals of mullets, sometimes even into the nets of the fishermen.

Their motions in the water are performed with such rapidity, that the French sailors call the Dolphin, the Sea-Arrow. Mr. Saint Pierre, in his voyage to the Isle of France, assures us, that he saw a Dolphin swim, with apparent ease, round the vessel in which he was sailing, though it was going at the rate of about six miles an hour. A shoal of these animals followed the ships of Sir Richard Hawkins upwards of a

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thousand leagues. They were known to be the same, by the wounds they occasionally received from the sailors. And it has been remarked, that when their regular course has not been by accident changed, they usually swim against the wind. Their gambols on the surface of the ocean, sometimes afford a most entertaining spectacle. By curving their body, and suddenly extending it like a salmon, they leap to a very considerable height above the surface of the water. These leaps have been sometimes repeated with such astonishing celerity, that it is scarcely possible to conceive how, in such short intervals, the necessary force could be impressed. They have been known on these occasions, to spring forward to a distance of more than twenty feet, at a single bound.

THE PORPOISE.

The Porpoise is well known in all the European seas. In its general form, it resembles the dolphin. It is generally from six to seven feet in length; thick in the fore-parts, and gradually tapering towards the tail.

It is seldom that Porpoises are seen, except in troops of from six or seven, to thirty and upwards in number. Their appearance is believed by seamen to be a sign of approaching

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storms; and, on that account, they are held by them in great detestation.

They feed on nearly all kinds of fish, but particularly on mackerel, herrings, and cod of different kinds, which they pursue with astonishing voracity. We are informed, likewise, that whenever a Porpoise happens to be wounded, all the rest of the troop will immediately attack and devour him.

In the river Saint Laurence, in Canada, where these animals are very numerous, the natives adopt the following method of catching them: the people collect a number of sallow twigs, and stick them firmly into the sand-banks of the river, which, at low water, are left dry: this is done on the side towards the river, forming a long line of twigs at moderate distances, which at the upper end is connected with the shore, an opening being left at the lower end, that the fish may enter. The Porpoise, in quest of his prey, gets within the line of twigs, which is covered from sight by the rising of the tide, where he continues his chace, till the ebbing of the tide compels him to retire into the deeper water. He now makes towards the river; but the twigs being then in part above water, and all agitated by the current, he no sooner sees them shaking about, than he takes fright, and retreats backwards as far as he can. The tide still continuing to ebb, he returns time after time; but never being able to recover his dread,

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he rolls about, until he is deserted entirely by the water; when those who placed the snare, rush out in numbers properly armed, and in this defenceless state, overpower him with ease. In this manner more than a hundred of these huge creatures (one of which will yield about a hogshead of oil,) have been killed at one tide.

THE GRAMPUS.

The length of this animal is usually from twenty to twenty-five feet. In form and colour it much resembles the Dolphin, but the lower jaw is considerably wider than the upper.

It is a decided and inveterate enemy to the different species of Whales; great flocks of them attack the largest of these, fastening round them like so many bull-dogs, making them roar out with pain, and frequently killing and devouring them.

From their vast agility they are not often caught. They seldom remain more than a moment above the surface of the ocean, but their eager pursuits sometimes throw them off their guard, and allure them into the shallow waters. In this case, the hungry animal continues to flounder about, till either knocked on the head, by those who happen to observe it, or till the

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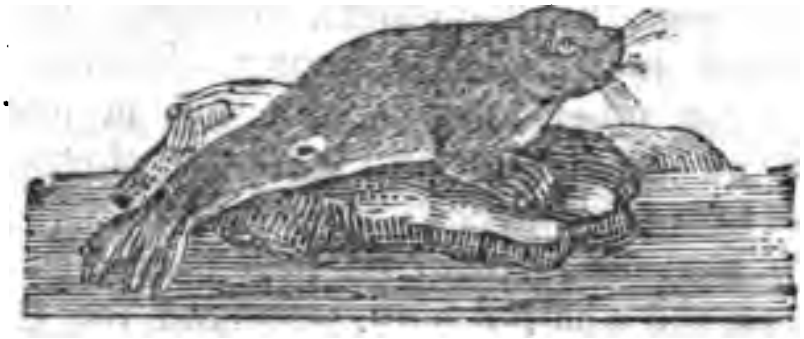
tide comes seasonably to its relief. In the poems of Waller, a story (founded on fact) is recorded, of the paternal affection of these animals.—A Grampus and her cub had got into an arm of the sea, where, by the desertion of the tide, they were enclosed on every side. The men on shore saw their situation, and ran down to them, with such weapons as they could at the moment collect. The poor animals were soon wounded in several places, so that all the immediately surrounding water was stained with their blood. They made many efforts to escape; and the old one, by superior strength, forced itself over the shallow, into the deep of the ocean. But, though in safety herself, she would not leave her young one in the hands of the enemy. She therefore again rushed in; and seemed resolved, since she could not prevent, at least to share the fate of her offspring. The story concludes with poetical justice—for the tide coming in conveyed them off in triumph.



THE SEAL.

The head of the Seal is round, the neck well proportioned, and of a moderate length; and

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the body thickest where the neck is joined to it. From thence, the animal tapers down to the tail, being covered with a thick bristly shining hair. In the fore feet, or rather hands, all the arm is hid under the skin, and nothing appears but the hand from the wrist downwards; so that if we imagine a child with its arms swathed down, and nothing appearing but its hands, at each side of the body, we may have some idea of the formation of this animal in that part. As to the hind feet, they are covered with a hairy skin like those before—the water is the Seal's usual habitation, but though it can continue for several minutes under water, it is not able to remain there for any length of time; and a Seal may be drowned like any land animal; it is ill formed however for going upon land, and therefore is seldom found at any distance from the sea-shore.

The Seal is a social animal—they are found in every climate, but in the North and Icy Seas, the shores of which are less inhabited than ours, they are seen by thousands, basking on the rocks, and suckling their young. There they watch, like other animals that live in troops, and, if an enemy appear, instantly plunge all together into the water.

They Europeans, who go into the Greenland seas upon the whale-fishery, surround the Seals that they find there, with nets, and knock them on the head; but the Greenlanders, destroy

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them in a different and a more simple manner. One of these little men paddles away in his boat, and when he sees a Seal asleep on the side of a rock, darts his lance, with such unerring aim, that he never fails to bury its point in the animal's side. The Seal, feeling itself wounded, instantly plunges from the top of the rock, lance and all, into the sea, and dives to the bottom: but the lance has a bladder tied to one end, which keeps buoyant, and resists the animal's descent, so that, every time the Seal rises to the top of the water, the Greenlander strikes it with his oar, until he at last dispatches it.

THE SHARK.

Of all the inhabitants of the deep, the Shark is the fiercest and most voracious. The head of this animal is large, the mouth enormously wide, and capable of swallowing a man with great ease. But its furniture of teeth is still more terrible; of these there are six rows, extremely hard and sharp-pointed. When the Shark is at rest they lie quite flat in his mouth: but when he prepares to seize his prey, he erects all this dreadful apparatus, and the animal he seizes, dies, pierced with a hundred wounds in a moment.

As the Shark is thus formidable in his appearance, so he is also dreadful from his courage and

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activity. He outstrips the swiftest ships, plays round them, darts out before them, returns, seems to gaze at the passengers, and all the while does not exhibit the smallest symptom of an effort to proceed. Such amazing powers would quickly unpeople even the ocean; but, providentially, the Shark's upper jaw projects so far above the lower, that he is obliged to turn on one side to seize his prey; as this takes some small time to perform, the animal pursued seizes that opportunity to make its escape.

Still, however, the depredations he commits are frequent and formidable. The Shark is the dread of sailors in all hot climates, and bathing in the sea, so delicious and refreshing, is on this account extremely dangerous. A sailor that was bathing in the Mediterranean, in the year 1744, perceived a monstrous fish making towards him, and surveying him on every side, as fish are often seen to look round a bait. The poor man, struck with terror at its approach, cried out to his companions in the vessel to take him on board.—They accordingly threw him a rope with the utmost expedition, and were drawing him up by the ship's side, when the Shark darted upon him from the deep, and snapped off his leg.

But though the Shark be dreaded by Europeans, the Negroes along the African coast, are by no means afraid to meet it. Armed with nothing more than a knife, the Negro plunges into

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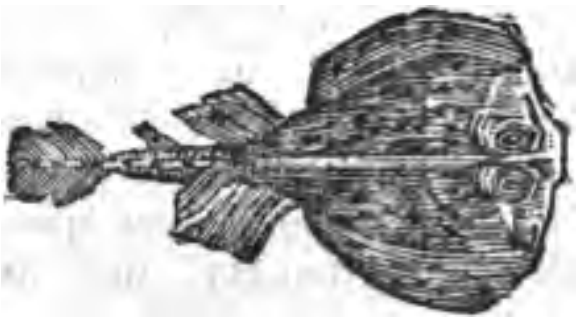
the water, where he sees the Shark watching for his prey, and boldly swims forward to meet him: though the great animal does not come to provoke the combat, he does not avoid it, and suffers the man to approach him; but just as he turns on his side to seize the aggressor, the Negro watches the opportunity, plunges his knife in the fish's belly, and pursues his blows with such success that he lays it dead at the bottom: he soon however returns, fixes the fish's head in a nooze, and drags it to shore, where it makes a noble feast for the adjacent villages.



THE RAY.

All fish of the Ray kind swim flat on the water. They all have their eyes and mouth placed quite under the body, with apertures for breathing, either about or near them. But what they are chiefly distinguished by, is their spines or prickles, which the different species have on different parts of their body.

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Of all the larger fish of the sea, these are the most numerous; and they owe their numbers to their size. Except the white Shark and Cachalot alone, there is no other fish that has a swallow large enough to take them in; and their spines make them a still more dangerous morsel. Labat tells us of a prodigious Ray, which was thirteen feet eight inches broad, and above ten feet from the snout to the insertion of the tail. This enormous fish was utterly unfit to be eaten by the Europeans; but the Negroes chose out some of the nicest bits, and carefully salted them up as a most favourite provision.

The Ray chuses for its retreat, such parts of the sea as have a black muddy bottom. As they are ravenous, they easily take the bait, yet will not touch it, if it be taken up and kept a day or two out of water. They appear by their manner to perceive the line and to dread it, but the impulse of their hunger is too great for their caution; and, even though they perceive the danger, if thoroughly hungry, they devour the destruction.

THE ELECTRICAL EEL, OR TORPEDO.

This curious species of Eel is peculiar to South America, where it is found only in the rocky parts of rivers, at a great distance from the sea. It possesses the singular property of

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giving a sudden and violent shock, to those who touch it, with numbness and pain, sometimes so violent as to be of serious consequence.—Resembling the shock of an electrical machine, sudden, tingling and painful.

Doctor Williamson informs us, that on touching an Electrical Eel with one hand, a sensation is experienced, similar to that arising from being electrified. He put his hand into the water, at the distance of three feet from it, and felt an unpleasant sensation in the joints of his fingers. Some small fish were thrown into the water, and the animal immediately stunned and swallowed them. Doctor Williamson put his hand into the water, and had another fish thrown in at some distance. The Eel swam up to it, and at first turned away without offering it any violence; after a little time, he returned, and looking steadfastly at it for a few seconds, gave it a shock, by which it instantly turned on its back and became motionless. Doctor Williamson, at that very instant, felt the same sensation in his fingers, as when he put his hand into the water before. A fish was afterwards struck, but not quite killed: when the Electric Eel perceived this, he returned, and at a second shock, evidently more severe than the former, rendered it motionless. On touching it with one hand, so as to provoke it, and holding the other in the water at a little distance, a severe shock was felt through both the arms, and across the breast,

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similar to that from an electrifying machine. Eight or ten persons, with their hands joined, experienced the same, on the first touching the head, and the last the tail of the fish. A dog being made a link in this chain, at the instant of contact, uttered a loud yell.

This property seems of use to the Electrical Eel, not only for defence, but in securing their food; for, being destitute of teeth, they would otherwise be scarcely able to seize it.

THE CUTTLE FISH.

The Cuttle Fish possesses most extraordinary qualities. It is about two feet long, covered with a very thin skin, and its flesh composed of a substance like jelly, which, however, within-side is strengthened by a strong bone, of which great use is made by the goldsmiths. It is possessed of eight arms, which are of service to it in fishing for its prey; and which, while alive, the animal can lengthen or contract at pleasure. They feed upon small fish which they seize with their arms, and are bred from eggs, which are laid upon the weeds along the sea shore.

The Cuttle Fish is found along many of the coasts of Europe, but is not easily caught, from a contrivance with which it is furnished by na-

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ture: this is a black substance of the colour of ink, which is contained in a bladder, on the left side of the belly; whenever, therefore, this fish is pursued, and when it finds a difficulty of escaping, it spurts forth a great quantity of this black liquor, by which the waters are discoloured, and then it escapes by lying close at the bottom. In this manner, the creature finds its safety, and men have ample cause for admiration, from the various modes in which Nature has enabled the different animals to consult for their preservation.

This liquid has been known from the remotest ages, and has been applied to various uses; when mixed with other matters, it has proved a good dye, and it has been applied as ink, for writing and printing. When the animal is taken, it emits a great deal of this juice, and makes a noise like a hog. In this creature, we find a remarkable instance of conjugal affection; the union of the male and female, when once formed, is during life; and in defence of the female and the young, the male will expose itself with great boldness to considerable danger; if he should be taken, they immediately fly with great terror. But to return to the enormous size, at which it is said they arrive in the Indian seas: its body, it is asserted, is sometimes two fathoms, that is twelve feet, across the centre, and the arms stretch out to the amazing length of nine fathoms, or fifty-four

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feet. So impressed are the Indian fishermen with the truth of this account, that they never row out in their little boats, without a sharp axe, by which they may cut off any of these arms, which may be cast over the boat, and which they think would overset it.

THE STURGEON.

The Sturgeon, sometimes grows to the prodigious length of eighteen feet, and the weight of five hundred pounds, and yet, is as harmless a fish as swims in the sea.

The Sturgeon in its general form resembles a fresh water pike. The nose is long; the mouth is situated beneath, being small, and without jaw-bones or teeth. But though it is so harmless and ill provided for war, the body is formidable enough to appearance. Its body is long, five sided, and covered with five rows of large bony knobs, and a number of fins to give it greater expedition.

There is not a country in Europe but what this fish visits at different seasons; it annually ascends the largest rivers to spawn. The inhabitants along the banks of the Po, the Danube, and the Wolga, make great profit yearly of its incursions up the stream, and have their nets prepared for its reception. The Sturgeon also

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is brought daily to the markets of Rome and Venice where its flesh is used as food. In England, it was formerly much esteemed, but is now fallen into disrepute; it is still, however, caught at the mouths of rivers. But though the flesh no longer furnishes the inhabitants of these countries, with the article of food, a very great trade is carried on with the roe, which when salted and dried is called Caviar. But the Isinglass fish which is only a variety of the Sturgeon, furnishes a still more valuable commodity. This fish is caught in great quantities in the Danube, and weighs from fifty pounds to upwards of four hundred; its flesh is soft, gluey and flabby; but when salted, is better tasted, like Salmon. It is for the commodity it furnishes, that it is chiefly taken. Isinglass is very well known to the varnisher, the wine merchant, and even the clothier, and very great sums are yearly expended upon this single article of commerce. The manner of making it is this; the skin, the entrails, the fins and the tail, are cut into small pieces; and after being left to steep in a sufficient quantity of warm water, are boiled over a slow fire, until they are dissolved and reduced to a jelly; this jelly is spread upon plates made for the purpose, so that, drying, it assumes the form of parchment, and, when quite dry, is then rolled into the form which we see in shops.

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This valuable commodity is principally furnished from Russia, where they prepare great quantities surprisingly cheap.

OF THE MIGRATION OF FISHES.

It is a most extraordinary circumstance in the history of fishes, that at certain seasons of the year, some species will set out in vast shoals, and journey from one part of the sea to another, for the purpose, as is supposed, of depositing their spawn. This is called the migration of fishes, a short account of which we shall now give, for the young reader's instruction. There are many different kinds, as the Salmon, the Cod, the Mackerel and the Herring; which are found to take their distant journeyings, but we select the last, as most likely to interest. Herrings are found, in the greatest abundance, in the highest northern latitudes. In those inaccessible seas, that are covered with ice for a great part of the year, they find a quiet and sure retreat from all their numerous enemies: thither neither man, nor their still more destructive enemy, the Fin fish, or the Cachalot, dares to pursue them. The quantity of insect food which those seas supply is very great; which causes them to multiply beyond expression; as is the case with bees, therefore, when want of room and

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food has driven them from the hive, they are compelled to seek for other retreats.

The great colony sets out from the icy sea about the middle of winter; but soon separates into two shoals, one body of which moves to the west, and pours along the coasts of America, as far as Carolina, while the other directs its course to Europe, and first appears off the Shetland isles, in April: here again it divides into two squadrons, one taking the western coasts of Great Britain and Ireland, and the other the eastern coast. During their progress, they are pursued by enemies of all descriptions, and among others, by man. Their approach being carefully watched by the fishermen, who catch them in numbers beyond calculation. Considered as food, the Herring whether fresh or salted, is both cheap and nutritious. The Dutch were formerly most expert in taking and pickling them, but of late the liberality of Parliament, has given so much encouragement to our own fisheries, that in a short time, it may be hoped, if we will but call forth our activity and industry in supplying ourselves, we shall no longer be obliged to purchase from foreigners, what providence has sent in such abundance to our own coasts.

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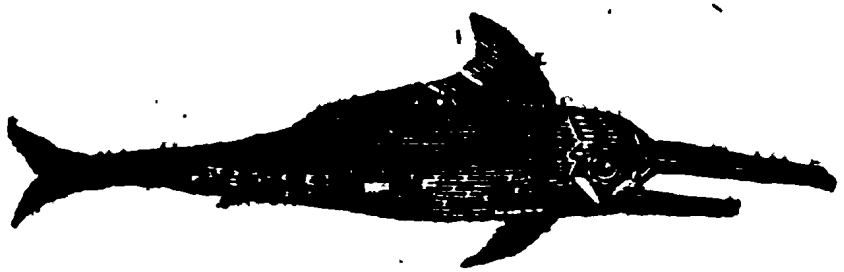

THE SWORD-FISH.

This fish sometimes weighs a hundred pounds. The body is long and rounded; largest near the head, and tapering towards the tail. The back is black, and the belly of a silvery white colour. The upper jaw is extended into a very long and depressed point, of a long substance, resembling a sword; the under one is much shorter, and terminates in a sharp point. The back fin runs along the whole length of the body; the tail is remarkably forked; and there are a pair of fins at the gills, but none on the belly.

The Sword-fish is common in the Mediterranean, and is not an absolute stranger to our coasts. It is said to be very voracious, and to be a particular enemy to the tunny. Its flesh is highly esteemed. The ancient mode of catch-

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ing it, as described by Strabo, entirely agrees with the modern. One person ascends a cliff that overhangs the sea; and, as soon as he spies the fish, he gives notice of the course which it takes, to another, stationed in a boat, at some little distance. The latter immediately climbs the mast, and directs the rowers towards it. When within reach, he descends, and taking a spear in his hand, strikes it into the fish; which, after fruitlessly wearying itself with agitation, is at length seized and dragged into the boat.

So great is the force with which the animal is endued that we are informed of one having struck its weapon into the bottom of a vessel, quite through the sheathing and plank, and beyond these, 4½ inches into the timber. The fish was killed by the violence of the effort—having left its snout embodied in the part it had pierced.

The Sword-fish and the whale never meet without coming to battle. If the latter can strike his adversary with his tail, the contest is soon over, but this, through the agility of the Sword-fish seldom happens. The whale, however, receives but little injury, even though the snout should wound him, as it never penetrates much beyond the blubber.

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THE COMMON COD.

This fish forms a valuable article both of luxury and of commerce—it is well and generally known.

These fishes are peculiar to the northern parts of the world, and appear confined nearly between the latitudes of fifty and sixty-six. On the banks of Newfoundland, the coasts of Cape Breton, Nova Scotia, and New England, they abound in an extraordinary degree: lured thither by the quantities of worms and small fish which the bottom supplies; and the vicinity to the polar seas, whither they resort to spawn.

The cod-banks of Newfoundland are a sort of submarine mountains; and of more real and beneficial value to Great Britain, than the Gold Mines of Potosi to Spain. The fishing season generally commences in February, and ends in May, the fish being then in the highest perfection, and, from the state of the atmosphere, most capable of being properly cured.

Great numbers are used in Great Britain and Ireland, particularly fresh; previously, however, to the discovery of Newfoundland, the seas of Iceland, and the Hebrides supplied the principal fisheries of Cod, and in that view were the grand resort of ships from all commercial nations.

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Providence has bountifully ordained, that this fish, so beneficial to mankind, should, by its astonishing fecundity, keep pace with the annual depredations that are made among its race. By the help of a microscope, nine millions three hundred and eighty four thousand eggs have been counted in a Cod of only a middling size. In our seas they begin to spawn in January: and deposit their eggs in rough ground, among rocks and shelves. The general weight of such as these parts supply, is from fourteen to forty pounds; though, occasionally, they are found much larger. A Cod was caught at Scarborough, in 1755, which measured five feet eight inches, and the girth round the shoulders was five feet; it weighed seventy-eight pounds: this fish was sold at the very low price of a shilling.

THE HOLIBUT.

This is the largest fish of the flounder genus. In the British and Irish seas some have been caught weighing from two to three hundred pounds; and in those of Newfoundland, Greenland, and Iceland, they are found much larger. Indeed the Holibut constitutes no inconsiderable part of the provision of a Greenlander, after being cut into large slices and dried by the sun.

It is frequently exposed in pieces for sale in

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our markets: but its flesh is coarse for eating, except the part which adheres to the side fins, which is extremely fat and delicious, though at the same time rather surfeiting. It is excessively voracious; and, in respect to length, the narrowest of all the genus except the sole.

The body is perfectly smooth, and free from spines: the colour of the upper part is dusky; the under is a pure white. Both eyes, as is common in flat fish, are placed on one side of the head; and it swims sideways.

THE TURBOT.

This well known valuable fish is of a square figure. The colour of the upper part of the body is ash coloured, marked with numerous black spots of different sizes; the belly is white; and the skin is destitute of scales, but much wrinkled, and mixed with small short spines, irregularly disposed.

The Turbot grows to a very considerable size, frequently weighing from twenty to thirty pounds. It is chiefly taken off the north coast of England, and on those of Scotland and Ireland. It generally keeps in deep water, and is commonly drawn up by hooks and lines. Turbots, as well as all other flat fish, are extremely delicate in the choice of baits, but shew a pre-

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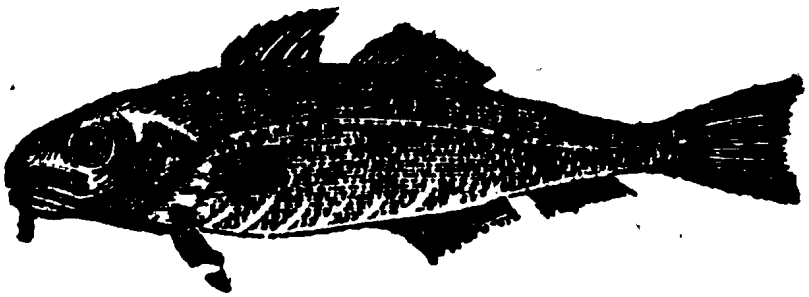
dilection for fresh herrings. The fishery for them requires to be conducted with skill and regularity: the Dogger bank is one of the best known stations.



THE SALMON.

This most valuable and well known fish is chiefly, if not altogether, confined to the northern latitudes. It is unknown in the Mediterranean, but extends as far north as Greenland. In some countries, it constitutes a principal resource of the inhabitants as an article of food and commerce. There are stationary fisheries of Salmon in Ireland, Norway, and the Baltic; at Aberdeen, in Scotland; and various other places. In all parts of Europe the size of these fishes is nearly the same; the largest weighing from thirty to forty pounds; though some have been caught of much greater magnitude, weighing seventy pounds.

The flesh of the Salmon, when fresh killed, is not so red as when boiled or salted: it is ten-

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der, luscious, and flaked; and is generally preferred to that of any other fish. About the time of spawning, however, it becomes somewhat insipid, and the fish loses much of its beautiful colouring.

The Salmon inhabits salt and fresh water alike; it quits the sea at certain seasons, in order to deposit its spawn with security in the gravel beds of rivers, at a distance from their mouths; and passes along by leaping up such perpendicular falls as it meets with in its way.

Nothing is more remarkable in the history of Salmon than their surprising agility in surmounting every natural obstacle which opposes their passage to and from the sea.

They are frequently seen to throw themselves up cataracts and precipices, many yards above the level of the water; and if foiled at the first essay, never desist till they have accomplished their purpose. On the river Tivy, in Pembrokeshire, there is a remarkable cataract, where the surrounding inhabitants often assemble to admire the strength and agility of these creatures, while endeavouring to reach the river from the sea. On the river Wear, near Durham, there is another Salmon-leap (as it is called;) and a third near Dov, at old Aberdeen; but none of them is equal to the famous Salmon-leap at Leixlip near Dublin.

All fishermen agree that no food is ever found

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in the stomach of the Salmon. It is probable that during the spawning season they neglect their aliment, like some other fishes; and it is observed, that they always return to the sea bare, though they left it in good condition. It is evident that they vary their food; for anglers use both fish and worms with good success; and sometimes an artificial fly proves a tempting bait.

THE CHÆTODON, OR SHOOTING-FISH.

This fish has a hollow cylindrical beak, which it uses in a very singular manner. It is a native of the East Indies, where it frequents the margin of the seas or rivers in search of food. When it spies a fly sitting on the plants that grow in the shallow water, it swims towards it, and at the distance of some feet, ejects a single drop of water from its tubular mouth, which never fails of striking the fly into the water, where it soon becomes the prey of its foe. There are several species of the same genus, but none so remarkable as this.

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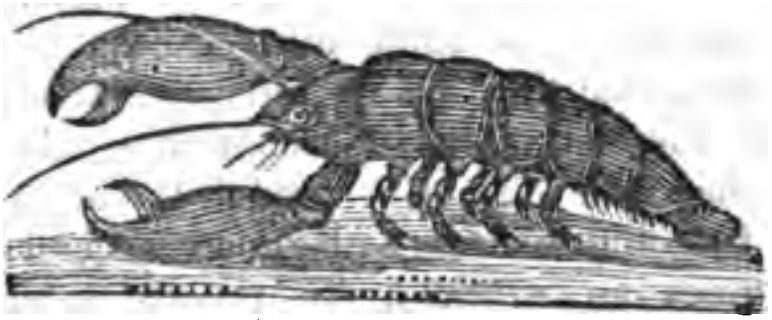

THE LOBSTER.

THE Lobster is an animal of a very extraordinary form. It has two great claws in the fore part of the body both for seizing its prey and for defence; these, by opening like a pair of nippers, have great strength, and take a firm hold; they are usually notched, like a saw, which still more increases their tenacity. The Lobster also has eight legs, four on each side; and the body is composed of a number of joints, the whole being covered with a hard crust or shell, which effectually defends it from its enemies. The mouth, like that of insects, opens the long way of the body. It is furnished with two teeth for breaking its food; but as these are not sufficient, it has three more in the stomach; one on each side, and the other below. It is furnished with two long feelers or horns, that issue on each side of the head, that seem to correct the dimness of its sight, and apprize the animal of its danger, or of its prey. The tail, or that jointed instrument at the other end, is the grand instru-

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ment of motion; and with this it can raise itself in the water. Under this we usually see lodged the spawn in great abundance.

When the young Lobsters leave the parent, they immediately seek for refuge in the smallest clefts of rocks, where the entrance is but small, and the opening can be easily defended. There they grow larger in a few weeks time, from the mere accidental substances which the water washes to their retreats. By this time, also, they acquire a hard, firm shell, which furnishes them with both offensive and defensive armour. They then begin to issue from their fortresses, and boldly creep along the bottom, in hopes of meeting with the spawn of fish, the smaller animals of their own kind, or the worms that keep at the bottom of the sea.

But this life of abundance and security, is soon to have a most dangerous interruption; the body of the animal soon grows too large for its habitation; it therefore bursts its shell, shaking it off with a most painful exertion of its strength, its stomach also comes away with the shell. Immediately after this change, the animal has not only the softness, but the timidity of a worm. This, in fact, is the time when other fish devour them by hundreds. But this state of weakness continues for a very short time. In about forty-eight hours, in proportion to the animal's health and strength, the new shell is perfectly formed, and as hard as that which was but just thrown aside.

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The creature thus furnished with a complete covering, ventures more boldly among the animals at the bottom; and not a week passes that, in its combats, it does not suffer some mutilation. A joint, or even a whole claw, is sometimes snapped off, in these encounters. It is a very surprising fact, however, that this is not an irreparable injury. From the place where the joint of the claw was cut away, the beginning of a new claw is seen to grow. This, if observed at first, is small and tender, but grows, in the space of three weeks, to be almost as large and as powerful as the old one. It never arrives, however, to the full size.

THE CRAB.

As the Crab is found upon land as well as in the water, the peculiarity of its situation produces a difference in its habitudes, which it is proper to describe. The Land Crab is found in some of the warmer regions of Europe, and in all tropical climates. That variety called the Violet Crab of the Carribee Islands, is the most noted both for its shape, the delicacy of its flesh, and the singularity of its manners.

The Violet Crab somewhat resembles two hands cut through the middle and joined together; for each side looks like four fingers, and the two nippers or claws resemble the thumbs. A little below the middle of the body, is the

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mouth, in which there are two broad sharp teeth, as white as snow. With these teeth, they can easily cut leaves, fruits, and rotten wood, which is their usual food. But their principal instrument for cutting and seizing their food, is their nippers, which catch such a hold, that the animal loses the limb sooner than its grasp, and is often seen scampering off, having left its claw still holding fast upon the enemy. In fact, it loses no great matter by leaving a leg or an arm, for they soon grow again, and the animal is found as perfect as before.

These animals live not only in a kind of orderly society in their retreats in the mountains, but regularly once a year, march down to the sea side in a body of some millions at a time. The sea is their place of destination, and to that they direct their march with right-lined precision. No geometrician could send them to their destined station by a shorter course; they neither turn to the right or left, whatever obstacles intervene; and even if they meet with a house, they will attempt to scale the wall, to keep the unbroken tenor of their way. They are often obliged to halt for want of rain, and go into the most convenient encampment till the weather changes. When the sun shines, and is hot upon the surface of the ground, they then make an universal halt, and wait till the cool of the evening.

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When after a fatiguing march, and escaping a thousand dangers, for they are sometimes three months in getting to the shore, they have arrived at their destined port, they prepare to cast their spawn, into the water. At this time, whole shoals of hungry fish are at the shore, in expectation of this annual supply; and about two-thirds of the Crab's eggs are immediately devoured by these rapacious invaders. The eggs that escape are hatched under the sand; and soon after, millions at a time of these little Crabs are seen quitting the shore, and slowly travelling up the mountains.

The old ones, however, are not so active to return. The most of them, therefore, are obliged to continue in the flat parts of the country till they recover. There they throw off their old shells, and remain almost without motion for six days together. They have then under their stomachs four white large stones, which gradually decrease in proportion as the shell hardens, and when they come to perfection are not to be found. It is at that time that the animal is seen slowly making its way back; and all this is most commonly performed in the space of six weeks.

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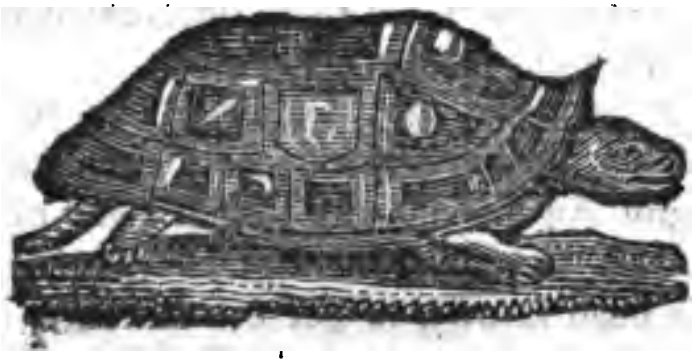

THE TORTOISE.

The characters of the Tortoise are that it is covered with a thick shell, and furnished with a tail; that the mouth is without teeth, and that it has four feet. Such as subsist principally in the water are usually called Turtles, while those that live on land are exclusively called Tortoises; between their figure, there is no difference. The land Tortoise is found from one to five feet in length, and from five to eighteen inches across the back. The head is circular, somewhat like that of the Serpent, and may be either pushed out or concealed under the shell at pleasure. The eye has no upper lid; the tail is long and scaly, like that of the Lizard, and the outer covering of the shell is composed of several pieces united in the firmest manner. Though this animal is of the most peaceable disposition, it is formed for war in another respect, for it seems almost impossible to deprive it of life. It is remarkable for its longevity, and though it is difficult to ascertain its precise duration, there was one kept in the Archbishop of Canterbury's

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garden, at Lambeth, in London, that was above an hundred and twenty years old.

During winter, the Tortoise lies torpid in some cavern under ground, and from this state it does not awake till the genial heat of spring returns. Its strength is so considerable that a child has been known to get on the back of one, without retarding its pace. When the Tortoise prepares to lay, the female scratches a slight depression in the earth, generally in a warm situation, where the beams of the sun have their full effect. The Turtle or sea Tortoise, is of various kinds, most of them well known to epicures. The green Turtle in particular, forms an extensive article of commerce, and our West Indian ships are generally supplied with conveniencies for keeping it alive, during the voyage. Yet whoever wishes to eat the flesh in its highest perfection, should make a voyage to its native shores. A common sized green Turtle will weigh two hundred weight, but some have been caught that exceeded eight hundred. The Turtle seldom quits the sea, except to deposit its eggs in the sand, which are hatched in about twenty-five days by the heat of the sun. The young as soon as they burst from the sand, guided by instinct run towards the sea. The Mediterranean furnishes a kind of Turtle of considerable size; but though it is extremely fat, the flesh is coarse and unwholesome. Animals of this kind are sometimes caught on the British shores.

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THE NAUTILUS.

The Nautilus is a species of sea snail, with a white shell as thin as paper, which it often is seen to quit, and again to resume. This shell outwardly resembles that of a large snail; within, it is divided into forty partitions, that communicate with each other by holes, through which one could not thrust a goose quill: almost the whole shell is filled by the animnl; the body of which, like its habitation, is divided into as many parts as there are chambers in its shell, all communicate with each other, through the openings, by a long blood-vessel, which runs from the head to the tail. The manner by which it contrives to disengage its body from so intricate an habitation, making a substance, to appearance as thick as one's wrist, pass through forty doors, each of which would scarcely admit a goose quill, is not yet discovered: but the fact is certain, for the animal is often found without its shell; and the shell more frequently destitute of the animal.

But this, though very strange, is not the pe-

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culiarity for which the Nautilus has been most distinguished. When the sea is calm, they are seen floating on the surface; some spreading their little sail; some rowing with their feet, as if for life and death; and others still, floating upon their mouths, like a ship with the keel upward. The Nautilus is furnished with eight feet; these are connected to each other by a thin skin, like that between the toes of a duck, but much thinner and more transparent. When it means to sail, it discharges a quantity of water from it, which renders it lighter than the surrounding medium, and therefore it rises to the surface. Here it extends two of its arms upwards, which by the thin skin connecting them, serve for a sail; the other six hang over the sides of the shell, and supply the place of oars and rudder.

THE MUSCLE.

The Muscle consists of two equal shells, joined at the back by a strong hinge. By the silky threads, which it forms from its body, it adheres to rocks both in the European and Indian seas; but it grows to a much larger size in the latter. All muscles have for an instrument of motion, a tongue or foot capable of being lengthened considerably, or of being shortened into the form of a heart. This the animal has a power of thrusting out of its shell; and with this it is capable of making a slight furrow in

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the sand at the bottom. By means of this furrow it can erect itself upon the edge of its shell, and thus continuing to make the furrow in proportion as it goes forward, it reaches out its tongue that answers the purpose of an arm, and thus carries its shell edge-ways, as in a groove, until it reaches the point intended. There where it determines to take up its residence, it fixes the ends of its beard, which are glutinous, to the rock or the object, whatever it be; and thus like a ship at anchor, braves all the agitations of the water. Sometimes the animal is attached by a large number of threads; sometimes but by three or four, that seem scarce able to retain it. Some of the beards are a foot and a half long; and of this substance which resembles silk, the natives of Palermo sometimes make gloves and stockings.

THE OYSTER.

With the shape and appearance of the Oyster, almost every one is acquainted. It has always been represented as incapable of motion, and yet it is found in situations, which it could never have reached, without it had the power of changing its place. In tropical climates, the trees which grow upon the banks of rivers, often bend their branches into the water, and particularly the mangrove, which chiefly delights in a moist situation. To these, the Oysters hang in clusters,

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like apples upon the most fertile tree; and in proportion as the weight of the fish sinks the plant into the water, where it still continues growing, the number of Oysters which adhere to the branches increases.

Oysters usually cast their spawn in May, which at first appear like drops of candle-grease, and stick to any hard substance they fall upon. These are covered with a shell in two or three days; and in three years, the animal is large enough to be brought to market. But their size in this country, is nothing compared with that of the Oysters in the East-Indies, some of whose shells have been seen two feet over!

Oysters are frequently found to contain pearls; but that which particularly obtains the name of the pearl Oyster, has a large strong whitish shell, wrinkled and rough without, and within smooth, and of a silver colour. From these, the mother-of pearl is taken, which is nothing more than the internal coats of the shell, resembling the pearl in colour and consistence. This is taken out and shaped into that variety of utensils which are found so beautiful; but the pearl itself is chiefly prized; being found but in few Oysters, and generally adhering, sometimes making a print in the body of the shell, sometimes at large within the substance of the fish.

There are a great number of pearl fisheries in America and Asia. The most famous of all the Asiatic fisheries is in the Persian Gulph, and from it the most valuable pearls are brought.

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The wretched people that are destined to fish for them, are either Negroes or some of the poorest of the natives of Persia. They go out in a boat, and are quite naked, except that they have a net hanging down from their neck to put the Oysters in, and gloves on their hands to defend them, while they pick the Oysters from the holes in the rocks: for in this manner alone can they be gathered. Every diver is sunk by means of a stone, weighing fifty pounds, tied to the rope by which he descends. They are no sooner come to the bottom, but they give the signal to those who are in the boat to draw up the stone; which done, they go to work, filling their net as fast as they can; and then giving another signal, the boats above pull up the net loaded with Oysters, and shortly after the diver himself to take breath. They dive to the depth of fifteen fathoms, and seldom go deeper. They generally go every morning by break of day to this fatiguing employment, taking the land wind to waft them out to sea, and returning with the sea breeze at night. The owners of the boats usually hire the divers, and the rest of the boat's crew, as we do our labourers, at so much a day. All the Oysters are brought on shore, where they are laid in a great heap till the pearl fishery is over, which continues during the months of November and December. When opportunity serves, they then examine every Oyster, and it is accidental whether the capture turns

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out advantageous. Indeed no human being can wish well to a commerce, which thus chains such a number of fellow creatures to the bottom of the deep, to pluck up a glittering mouldering pebble.

THE PHOLAS.

Of all kinds of shell fish, the Pholades are, from their power of piercing the hardest substances, the most wonderful. These animals are sometimes found clothed in their proper shell, at the bottom of the water: sometimes concealed in lumps of marbly earth; and sometimes lodged, shell and all, in the body of the hardest marble.

When divested of its shell, the Pholas resembles a roundish, soft pudding, with no instrument that seems in the least fitted for boring into stones, or even penetrating the softest substances. Naturalists have however, discovered it to be furnished with a broad fleshy substance, resembling a tongue, and also that this is the perforator it makes use of.

The seeming unfitness, of this animal for penetrating into rocks, and there forming an habitation, induced many philosophers to suppose, that they entered the rock while it was yet in a soft state, and from the petrifying quality of water, that the whole rock afterwards

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hardened round them by degrees. This opinion, however, has been confuted, in a very satisfactory manner, by Doctor Bohads, who observed, that many of the pillars of the temple of Serapis, at Puteoli, were penetrated by these animals. From thence, he very justly concludes, that the Pholas must have pierced into them since they were erected; for no workman would have laboured a pillar into form, if it had been honeycombed by worms in the quarry. In short, there can be no doubt that the pillars were perfectly sound when erected; and that the Pholades have attacked them, during that time in which they continued buried under water, by means of the earthquake that swallowed up the city.

Once immured, however, the Pholas lives in darkness, indolence and plenty; it never removes from the narrow mansion into which it has penetrated: and seems perfectly content with being inclosed in its own sepulchre. The influx of the sea-water, that enters by its little gallery, satisfies all its wants; and without any other food, it is found to grow from seven to eight inches long, and thick in proportion.

But they are not supplied only with their rocky habitation; they have also a shell to protect them: this shell grows upon them in the body of the rock, and seems a very unnecessary addition to their defence, which they have procured for themselves by art.

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THE BARNACLE.

The shell of the Barnacle is of a sugar-loaf shape, and when perfect, is covered by a lid, which the animal inside raises from time to time to admit the sea water, and collect such food as is fitted for its nourishment. It is open at the bottom, by which it sticks to the rock, and that with so much firmness, that it is difficult to separate it, even with a knife. The little inhabitants of these shells are very singularly formed, having twenty-four small feelers, which resemble so many feathers, and which serve them to secure the small sea insects, on which they feed.—Whenever the animal feels inclined to search for prey, it lifts the lid which covers the shell, and stretches out its feelers like so many arms, which remain extended till something comes within its reach; when the Barnacle immediately seizes upon the prize, and sinking within its shell, devours it at leisure.

THE RAZOR FISH.

This shell fish is provided with a habitation shaped like the handle of a razor, and therefore well adapted for assisting the animal in penetrating the sand in which it resides; just over the place where the Razor buries itself, there is a small hole like a chimney, through which the animal breathes, or draws in the sea water.

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Upon the desertion of the tide, these holes are easily distinguished by the fishermen, who seek for it; and their method of enticing the Razor up from its retreat is, by sprinkling a little sea salt upon the hole. This melting, no sooner reaches the Razor below, than it rises instantly straight upwards, and shews about half its length above the surface. Its appearance however is momentary, and if the fisherman does not seize the opportunity, the Razor buries itself with great ease to its former depth; there it continues secure. In England, the Razor fish is chiefly used for bait, but in Ireland it is eaten, and is said to be nearly as rich and palatable as the lobster.

These animals are not provided with the means of leaving the spot where they are placed, though they are furnished with a tongue, which amply fits them for their ordinary motions, and is perhaps one of the most curious of Nature's works. When it is to cut a hole in the sand, it takes the form of a shovel, ending in a point, and afterwards can assume that of a hook, by which it takes a firm hold, and buries itself to the desired depth. When the little workman has occasion to return to the surface, in search of food, the end of the tongue now has the shape of a knob, which it presses against the bottom of the hole, and pushes itself to the top.

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NATURAL HISTORY.

INSECTS.

THE BEETLE.

The Beetle, like all other winged insects, without exception, is bred from an egg, which undergoes three changes before the animal appears in its perfect state. From an egg, it becomes a worm, then a chrysalis, in which the parts of the future fly are covered up as in a case; and, lastly, the animal leaves its prison, breaking forth as a winged insect in full maturity.

Insects of the Beetle tribe have one peculiarity, in which they differ from all others; they are furnished with cases to their wings, in which they can enclose them at pleasure. These afd us striking instances, how admirably Nature

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adapts her creatures for the life they are to lead. Beetles often live under ground in holes, which they dig out by their own industry; these sheaths therefore prevent the various injuries their wings might receive, from rubbing against the sides of their abode.

The strength of the Beetle, also, fits it for digging its under ground habitation; their muscles are formed very like those of quadrupeds, and are endued with such surprising force, that, bulk for bulk, they are a thousand times stronger than those of a man.

The largest of this kind is called the Elephant Beetle, and is a native of South America. It sometimes measures not less than six inches in length, and is covered with a very hard shell, as thick and as strong as that of a Crab; it is furnished with an enormous beak. The wing shells are inclined to blue, marked with round black spots, and the head and limbs are of a jet black.

THE COCK-CHAFFER.

The Cock-chaffer, another animal of the Beetle tribe, resembling that we have just described, is a very mischievous insect, both in its Caterpillar and perfect state: in the former, it lives in ploughed lands, and makes dreadful havoc among the roots of grass and corn. The Cock-chaffer has sometimes appeared in such

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numerous swarms, as to strip the trees of their foliage, and threaten a famine; but in the wise arrangement of Nature, where an evil prevails, a remedy is provided to cure, or mitigate it. This insect, whilst a grub, and after it gets its wings, is the prey of many species of birds, which thin its numbers, and in general, prevent them from increasing, beyond a due proportion.

At the latter end of the seventeenth century, it appears, that some particular districts in Ireland, were overrun by this insect in a wonderful manner, and that the damage done by them was of the most serious description; the account is given as follows: "These insects first appeared in the year 1688, on the south-west coast of Galway, and in such vast numbers, that they darkened the air for the space of two or three miles square. In a short time after their coming, they had so entirely eaten up and destroyed all the leaves of the trees for some miles round, that the whole country, though in the middle of summer, was left bare as in the depth of winter; and the noise they made in gnawing the leaves, made a sound much resembling the sawing of timber. This plague was happily checked several ways. High winds and wet drizzling weather destroyed many millions of them in a day. In a little time, it was found that smoke was another thing very offensive to them, and by burning heath, fern, &c. the gardens were secured, or if the insects had already entered, they were thus driven out again. Towards the latter end

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of summer, they retired of themselves, and so totally disappeared, that in a few days, there was not one left."

THE BOMBARDIER.

This insect is a species of Beetle, having wings inclosed in a kind of case, to cover and wrap them up. It keeps itself concealed among the stones, and seems to make but little use of its wings; when it moves, it is by a sort of jump; and whenever it is touched, one is surprised to hear a noise resembling the discharge of a musket in miniature; during which, a blue smoke may be seen to proceed from the body of the animal. This insect may be made, at any time, to play off its little artillery, by scratching its back with a needle. This operation, it has the power of repeating, ten, twelve, or even twenty times in succession, thus frequently escaping by terrifying its pursuers, although the smoke emitted, seems to be altogether inoffensive. Its chief enemy is a great carabus: when pursued, and fatigued, it has recourse to this stratagem: it plants itself in the path of the carabus, which advances with open mouth and claws to receive it; but on the discharge of this artillery, suddenly draws back, and remains a while confused; during which, the bombardier conceals himself in some neighbouring crevice; if, however, it is not happy enough to find one, the carabus

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returns to the attack, takes the insect by the head, and tears it off.

THE GLOW WORM.

The Glow-worm is a highly curious and interesting animal on account of its luminous appearance. It is seen in England, though not in this country, sparkling in the dusk of the evening, like a bright diamond, on some mossy bank or hedge-way. The animal which gives forth the light, is the female insect, it measures about three quarters of an inch long, is without wings, and is of a dull earthy brown colour on the upper parts, with the two or three last joints of the body, of a pale, or whitish sulphur colour. It is from these parts that the light proceeds, which is of a yellow colour, with a very slight cast of green. The Glow-worm is a slow moving insect, and in its manner of walking seems to drag itself on by starts, as it were: The male is smaller than the female, and is provided both with wings and wing-sheaths, but is not luminous.

This curious property of shining by night, is given to the female, as a means of attracting the notice of the male, which without the help of so bright a torch, would be at a loss to discover its mate in the dark.

In Italy, the flying Glow-worm is extremely plentiful; and we are informed by Dr. Smith,

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and other travellers, that it is a very common practice (and surely it is a very inhuman one) for ladies to stick them by way of ornament in different parts of their head-dress, during the evening hours.

THE DEATH WATCH.

This insect has obtained its name from a groundless and absurd idea, that the beating noise made by the animal was an omen of approaching death. This idle terror is now fast wearing away; but it is singular that an animal so common, should not be more known, and its peculiar noise be more universally understood. Towards the latter end of spring this harmless little animal commences its noise, which is only a call to its mate, and like the call of birds, though not owing to the voice of the insect, but to its beating on any hard substance with the shield or fore part of its head. The sound exactly resembles that which may be made by beating gently with the nail on a table. The insect is a quarter of an inch in length, and of a colour so nearly resembling that of decayed wood, that it may for a considerable time elude the search of the inquirer. Incredible as it may appear, it may be so far familiarized, as to beat occasionally, by taking it out of its confinement, and beating on a table or board, when it will readily answer the noise, and will continue to beat as often as required.

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THE EARWIG.

The common Earwig is an insect familiarly known; its wings are remarkably elegant, and are rolled up in so many folds beneath their small sheaths, that they cannot be viewed without admiration: they are very large and transparent in proportion to the animal, though probably few careless observers know that they have any. The Earwig flies only by night, and it is not without great difficulty that it can be made to open its wings by day: it is even probable that they would receive injury by any long exposure to the air.

Instinct has taught the female to lay her eggs in damp situations, secure from heat or drought. Nor does her parental care stop here, as in most other insects: when they are hatched, she broods over them nearly in the same manner as a hen over her chickens, the little ones clinging to her sides for several hours in the day.

For a long time it was supposed that the Earwig was always on the watch to enter the ears of people sleeping, causing intolerable pain, and sometimes even death; but this is now known to be a vulgar error, arising only from ignorance; the ear is already fitted with a substance which must prevent any insect from entering, even though the ear wax were away. There have been indeed a few instances of insects, and among the number the Earwig, taking shelter in the ear of people asleep, but they were easily expelled by dropping into it a small quantity of spirits or sweet oil.

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THE LOCUST.

This insect is about three inches long. There is no animal in the creation that multiplies so fast, if the sun be warm, and the soil in which the eggs are deposited be dry. Happily for us, the coldness of our climate and the humidity of our soil, are no way favourable to their production.

When the Locusts take the field, they have a leader, whose flight they observe, and pay a strict attention to all his motions. They appear at a distance, like a black cloud, which, as it approaches, almost hides the light of day. They ravage the meadow and the pasture ground, strip the trees of their leaves, and the garden of its beauty; the visitation of a few minutes destroys the expectation of a year, and a famine but too frequently ensues.

Some of these prodigious swarms have been driven by high winds into rivers, where the offensive smell of their dead bodies, has caused a plague. It would be impossible to conjecture where this calamity would cease, were it not that the benevolent Author of Nature has mixed mercy with his chastisements, and provided remedies for the evil. Sometimes they are destroyed by storms, at others carried to distant regions by violent winds, and generally accompanied by the locust-eater, a bird whose vast numbers seem proportioned to the insects, which, by the wise adjustments of Providence, they are appointed to feed on and destroy.

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In some parts of the world, the inhabitants turn what seems a plague to their own advantage. Locusts are eaten by the natives in many kingdoms of the East; and are caught in small nets provided for the purpose. They parch them over the fire in an earthen pan, and when their wings and legs are fallen off, they turn reddish, of the colour of boiled shrimps. Dampier has eaten them thus prepared, and thinks them a tolerable dish. The natives of Barbary also eat them fried with salt; and they are said to taste like cray-fish.

THE GRASSHOPPER.

The Grasshopper is an animal so generally known, that a minute description of its form would be needless. Towards the latter end of autumn the body of the female is seen greatly swelled with her eggs, which she carries to the number of an hundred and fifty. In order to lodge them in the earth, nature has furnished her with an instrument at her tail, somewhat resembling a two-edged sword, which she can sheathe and unsheathe at pleasure; with this she pierces the earth as deep as she is able, and in the hole which this instrument has made, she deposits her eggs, one after the other.

Having thus provided for the continuation of her posterity, the animal herself does not long survive; but, as the winter approaches, she

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dries up, seems to feel the effects of age, and dies from a total decay. In the mean time, the eggs continue unaltered, by the severity of the season, until the sun with its warmth, beginning to animate all nature, the insects feel its benign influence; and generally about the beginning of May, every egg produces an insect, about the size of a flea. These appear, from the beginning, like Grasshoppers wanting wings; and hop among the grass, as soon as excluded, with great agility.

The Grasshopper, that for above twenty days from its exclusion, has continued without the use of its wings, which were folded up to its body, at length prepares for a life of greater liberty and pleasure. It disengages itself from its outer skin, but so fatigued is it with the exertion, that for a long time, it shews no signs of life. During this time, the body is drying, and the wings unfolding to their greatest expansion, and the curious observer will perceive them, fold after fold, opening to the sun, till at last, they become longer than the two hinder legs. The insect's body also is lengthened during this operation, and it becomes much more beautiful than before.

THE CRICKET.

The Cricket very much resembles the Grasshopper in its shape, voice, and habits; it dif-

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fers in its colour, which is uniformly of a rusty brown: in its food, which is more various; and its place of residence, which is most usually in the warmest chinks behind a country hearth. They are of a most chilly nature, seldom leaving the fireside; and if undisturbed, are seen to hop from their retreats to chirp at the blaze in the chimney.

As the Cricket lives chiefly in the dark so its eyes seem formed for the gloominess of its abode; and those who would surprise it, have only to light a candle unexpectedly; by which it is dazzled, and cannot find the way back to its retreat. It is a very voracious little animal, and will eat bread, flour and meat. They never drink, but keep for months together, at the back of the chimney, where they could not possibly have had any moisture. The warmth of their situation only serves to increase their mirth and loquacity. Except in the very coldest weather they never cease their chirping, but continue that little piercing note, so pleasing to some ears.

THE PERUVIAN LANTERN FLY.

The Lantern Fly, is undoubtedly one of the most curious insects. It is of a very considerable size, measuring nearly three inches and a half, from wing to wing. It is a native of Surinam, and many other parts of South America, and during the night, diffuses so strong a light from its

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head or lantern, that it may be employed for the purpose of a candle or torch; and it is said, that three or four of the insects, tied to the top of a stick, are frequently used by travellers for that purpose. An authoress in her work on the insects of Surinam, gives a very agreeable account of her surprise, at the flashes of light proceeding from these insects. "The Indians once brought me," says she, "before I knew that they shone by night, a number of these Lantern Flies, which I shut up in a large wooden box. In the night, they made such a noise, that I awoke in a fright, and ordered a light to be brought, not knowing from whence the noise proceeded. As we found that it came from the box, we opened it, but were still much more alarmed, and let it fall to the ground in a fright, at seeing a flame of fire come out of it; and as many animals as came out, so many flames of fire appeared. When we found this to be the case, we recovered from our fright, and again collected the insects, highly admiring their splendid appearance."

THE COCHINEAL.

This animal, which is a native of South America, is celebrated for the beautiful die it yields. The female insect, grows to such a size, that its different parts become almost imperceptible without the assistance of a glass; so that, on a general

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view, it bears as great a resemblance to a seed or a berry as to an animal. This was the cause of that difference in opinion, which long subsisted between several authors; some maintaining that Cochineal was a berry, while others contended it was an insect.

When the female reaches its full size, it fixes itself to the surface of the leaf, and envelops itself in a white cottony matter, which is observed to proceed from the tip of the proboscis.

The male is a small and rather slender fly, about the size of a flea, with jointed antennæ, and large white wings, the body being red. It is a lively animal, and is dispersed among the females, in the proportion of about one male to a hundred and fifty females. When the female insect has discharged all its eggs, it becomes a mere husk, and dies; so that the proprietors are very careful to kill the insects by the fumes of heated vinegar before that time, lest they should be disappointed of the beautiful colour. They are imported dried, into Europe: and it is said, that the Spanish government is more enriched by the profit of the Cochineal trade, than by all its gold mines.

THE CUCKOO-SPIT.

The Cuckoo-spit insect is so named from the circumstance of its producing, during its immature state, the white froth so common on various plants

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in the summer season, and popularly known by the name of the Cuckoo-spittle. During this, its immature state, the animal continues to suck with its proboscis, the juice of the plant on which it resides, discharging it at intervals from the hind part of its body, in the form of very minute bubbles, and by continuing this operation, completely covers itself under a large mass of the white froth. When arrived at its full growth, it measures about the fifth of an inch in length, and is of a beautiful pale green colour; it now casts its skin, and appears in its perfect state, when the wings are very conspicuous: the whole insect is now of a pale brown colour, with a pair of pale or whitish bands across the wings. In this state it is often called the frog-hopper, from a fancied resemblance to the shape of that animal in miniature. These insects breed in the month of September, and deposit their eggs towards the beginning of October, which, however, do not hatch till the following spring.

THE SILK-WORM.

The Silk-Worm is a large catterpillar, of a whitish colour, with twelve feet, and produces a Butterfly of the moth kind. The cone which it spins, is formed for covering it while it continues in the aurelia state; and several of these properly wound off, and united together, form those strong

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and beautiful threads, which are woven into silk. The feeding these worms, the gathering, the winding, the twisting, and the weaving their silk, is one of the principal manufactures of Europe; and a great source of wealth to the industrious.

China, one of the oldest peopled countries in the globe, appears to have been the first to make use of the web spun by the Silk-Worm. This creature, which, in its perfect state, is a moth, is hatched from the egg, in the form of a catterpillar, and passes from that state successively to those of a chrysalis, and of a winged insect. While a catterpillar, it eats voraciously, its proper and favourite food being the leaves of the mulberry tree. By this diet, it is enabled to lay up within its body, a kind of transparent glue, which has the property of hardening as soon as it comes into the air. When arrived at full maturity, it spins itself a web, out of this gluey matter, within which it is to lie safe, and concealed, during its change into the helpless state of a chrysalis.

The Silk-Worm's web is an oval ball, called a cocoon, about the size of a pigeon's egg, of a hue, varying from light straw to full yellow or white, and consisting of a single thread, wound round and round, so as to make a covering of the closest texture. In this it encloses itself, and would, if undisturbed, come forth, in fifteen days, a perfect moth. This, however, is prevented when the animal is reared for the sake of its

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silk, as the moth would in breaking its way through the web, destroy the silk. The balls are, therefore, exposed to such a heat as to kill the chrysalis, a few only being saved for the breed of the following year.

The moth, when hatched, is a very short-lived animal, and seems produced for the sole purpose of continuing its kind. The caterpillar has never been taught by a parent, since it is not hatched from the egg, till many months after all the parent moths are dead. Nor can it discern the use of spinning itself a web in which it is to be prepared for a new and untried state of being. It obeys, therefore an impulse implanted in it by the Almighty; guided by this unerring principle, it reaches its last and most perfect form, and having laid its eggs, and finished the purpose of its existence,—dies!

For a long time silk was brought from China overland to Europe, and it may be supposed that the expense of carriage so much enhanced its price as to confine its use to persons of great wealth. A fortunate circumstance, however, soon enabled Europeans to cultivate the insect which produces it, and it is in consequence so much reduced in value, that few are so humble as not to have it in some part or other of their dress. Two Monks who had long resided in China, viewed with a curious eye the silk manufacture there; they saw at once that it was impossible to transport the short-lived insect to Europe, but that in the eggs a numerous progeny might be

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multiplied in a distant climate; they concealed them, therefore, from the jealous Chinese in the hollow of a cane. In Constantinople the eggs were afterwards hatched by the artificial heat of dung, the worms were fed with mulberries, and a sufficient number of butterflies were thus produced to propagate the race.

The length of the Silk-Worm's thread, when unravelled, varies in different silk balls. Denham informs us, that a lady of his acquaintance, who took much pleasure in rearing Silk-Worms, had once the curiosity to draw out and measure the whole of one, and found it to be considerably more than 300 yards, though the weight was only two grains and a half.

THE ICHNEUMON FLY.

This Fly receives its name from the little quadruped, which is found to be so destructive to the crocodile, as it bears a strong similitude to it in its courage and rapacity.

The common Ichneumon, the most formidable and the best known, has four wings, like the bee, a long slender black body, and a three-forked tail, consisting of bristles; the two outer black, and the middle red.

Though this instrument, is, to all appearance, feeble, yet it is found to be a weapon of such great force, that it will penetrate even through mortar and plaster. This is the weapon of defence; this

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is employed in destroying its prey, and still more, by this the animal deposits her eggs wherever she thinks fit to lay them. As it is an instrument chiefly intended and employed for this latter purpose, the male is unprovided with such a sting.

All the flies of this tribe, owe their birth to the destruction of some other insect, within whose body they have been deposited. The caterpillar, the gnat, and even the spider, who is himself, so formidable to others, is often made the unwilling fosterer of this destructive progeny.

Though the Ichneumon chuses various kinds of insects, in whose bodies he may deposit his eggs, the greatest numbers are seen settling upon the back of the caterpillar, and darting their stings into its body. At every dart they deposit an egg, while the wounded animal seems scarcely sensible of the injury it sustains. In the mean time, the caterpillar thus irreparably injured, feeds as voraciously as before, and to all appearance, seems no way affected by the internal enemies that are preparing its destruction. But they soon burst from their egg state, and prey upon the substance of his body, till at last the animal is no longer able to sustain them, but dies; its whole inside being almost eaten away. It often happens, however, that it survives their worm state: you will then perceive a number of small maggots emerging from its body, and proceeding immediately to envelope themselves in distinct yellow cases, forming one group round the caterpillar. This fly so terrible to the insect tribe, is of infinite

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service to mankind. The millions which it kills in a single summer, are inconceivable; thus preventing the excessive multiplication of a race, which, without such checks would destroy all the fruits of the earth.

THE LIBELLA, OR DRAGON FLY.

Of all the flies which adorn the face of nature, these are the most beautiful; they are of all colours; green, blue, crimson, scarlet, white.

They are distinguished from all other flies by the length of their bodies, by the largeness of their eyes, and the beautiful transparency of their wings, which are four in number.

The largest sort are generally found from two to three inches long; their tail is forked; and their wings are of a beautiful glossy transparency; sometimes shining like silver, and sometimes glistening like gold. Within the mouth, are to be seen, two teeth covered with a beautiful lip; with these, the creatures bite fiercely when they are taken; but their bite is perfectly harmless.

These insects, beautiful as they are, are produced from eggs, which are dropped into the water: from each of these proceeds a worm with legs, which still continues in the water, where it creeps and swims, but does not move swiftly. It is exceedingly voracious, and commits great havoc among the smaller water insects in general.

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When these animals prepare to change from their reptile to their flying state, they creep up the stem of some water-plant, by which means, they rise above the surface of the water. They there firmly fix their sharp claws. It is then observed, that the skin first opens on the head and back; and out of this opening, the enclosed creature creeps forward by degrees; and by this means, draws first its wings, and then its body out of the skin; and proceeding a little farther, sits at rest for some time, as if immoveable. During this time, the wings, which were moist and folded, begin by degrees to expand themselves, and to make smooth and even, all those plaits which were laid against each other, like a closed fan. The creature cannot at first make use of its new wings, till its limbs are dried by the air. It soon, however, begins to enter upon a more noble life than it had hitherto led in the bottom of the brook; and from creeping slowly, and living accidentally, it now wings the air, and makes choice from amidst the variety of its provisions.

It is impossible not to be struck with admiration at the changes of this insect into such opposite states; while an inhabitant of the water, it would perish by any long exposure to the air, but now that it is become a winged animal, it would as effectually be destroyed by that element which not an hour before, was natural to it.

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THE EPHEMERA.

The Ephemera, in its fly state, is a very beautiful winged insect, and has a strong similitude to the butterfly, both from its shape and its wings. The latter, however, are not covered with the painted dust, with which those of butterflies are adorned, for they are very transparent and very thin.

The larva when ready to quit that state rises to the surface of the water, where it has remained for three years, and getting rid instantaneously of its skin becomes an aurelia with wings, which convey it to the nearest tree; upon this it settles, and in the same moment, undergoes its last change to a perfect Ephemera.

In this state, these flies live but a very short time, some scarcely half an hour: though they are called insects of a day, but very few of them ever see the light of the sun, being produced after sun set and dying immediately after.

We have already seen that the operation of change in other insects is laborious and painful; but with these, nothing seems shorter, or performed with greater ease. Millions of aurelias, rise to the surface: and at once become flies, and fill every quarter with their flutterings. But all these sports are shortly to have an end; for as the little strangers live but an hour or two, the whole swarm soon falls to the ground, and covers the earth for several hundred yards on each side of the river. Their numbers are in some places incredible. In Carniola in Germany, they are

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used as manure, and if each farmer cannot obtain twenty cart-loads, the harvest is considered a bad one.

At this time, the males and females are very differently employed. The males, after fluttering for an hour or two, drop on land and die. It is otherwise with the females; they are scarcely risen from the surface of the water, when they hasten to drop their eggs back again; which are seen issuing from the extremity of their body, to the number of about seven hundred. Thus of all insects, this appears to be the most prolific; and it would seem, that there was a necessity for such a supply, as, in its reptile state, it is the favourite food of every kind of fresh water fish. It is in vain that these little animals form galleries at the bottom of the river, from whence they seldom remove; many kinds of fish break in upon their retreats, and thin their numbers. For this reason, fishermen are careful to provide themselves with these insects, as the most grateful bait; and thus they turn the fish's rapacity to its own destruction.

THE LION ANT.

The Lion-ant is an insect that undergoes the same changes as the butterfly; a larva or worm being first produced from the egg, which at the proper time, spins a web, in which it encloses itself, till, at last, it bursts its way as a winged animal not unlike a small dragon fly.

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In the worm state, it has six feet, and two small horns crooked at the ends. At the tips of the feelers, there are two small black lively eyes, by which it can see the smallest object.

At first view, there is no insect appears so little adapted for attacking others. It has legs indeed; but these only enable it to run backward, so that it could as soon die as make the smallest progressive motion towards its prey. Providence must therefore furnish it with other means of supplying its wants, and we shall find the instincts given to it, for this purpose, such as Infinite Wisdom alone could implant. It survives the first winter, in its larva state, without taking any nourishment, but in spring, it chuses a dry sandy place, at the foot of a wall, or under some shelter, in order to preserve its works from the rain. The driest and most sandy spot is the most proper for it; because a heavy clogged earth would defeat its labour. When it goes about to dig the hole where it takes its prey, it begins to bend the hinder part of its body, which is pointed, and thus works backward, making a circular furrow, which serves to mark out the size of the hole it intends to make. Within this first furrow, it digs a second, then a third, and afterwards others, which are always less than the preceding. Then it begins to deepen its hole, sinking lower and lower into the sand, which it throws with its horns, or feelers, towards the edges, as we see men throw up sand in a gravel-pit. Thus by repeating its labours all

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round, the sand is thrown up in a circle, about the edge of the pit, until the hole is completed. This hole is always formed in a perfect circle, and the pit itself resembles the inside of an inverted funnel. It is generally about two inches deep, and as much in diameter.

The work being thus with great labour finished, the insect hides itself at the bottom under the sand in such a manner, that its two horns encircle the bottom of the pit. All the sides of this pit-fall are made of the most loose and crumbling materials; so that scarcely any insect can climb up that has once got down to the bottom. Conscious of this, the Lion-ant remains in patient expectation, ready to profit by that accident which throws some heedless little animal into its den. If an ant, a woodlouse, or a small caterpillar walks too near the edge of the precipice, the sand gives way beneath them, and they fall to the bottom of the pit, where they meet inevitable destruction. The fall of a single grain of sand gives the Lion-ant notice at the bottom of its cave; and it never fails to sally forth to seize upon its prey. It happens sometimes, however, that the ant or woodlouse is too nimble, and runs up the sides of the pit-fall, before the other can make ready to seize it. The Lion-ant has another contrivance, still more wonderful than the former; for, by means of its broad head and feelers, it has a method of throwing up a shower of sand, which falls upon the fugitive, and once more crushes it down to the bottom. When the

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insect is once fallen thus low, no effort can retrieve or release it; the Lion-ant seizes it with its feelers, which are hollow, and darting them both into its body, sucks out all the little animal's juices with the utmost voracity.

The next care of the little animal, is to remove the body from its cell, lest any other creature should be rendered aware of its danger; the insect, therefore, takes up the wasted trunk with its feelers, and throws it with wonderful strength, at least six inches from the edge of its hole, and then patiently sets about mending the breaches, which its fortification had received in the last engagement.

When the Lion-ant is full grown, it encloses itself in a web, made of gluey thread, which it spins like the spider, and of sand; the inside however of this hard case, is of incomparably fine and soft silk. When it has lain for some time in this, it throws off its outer skin, and becomes a chrysalis. This last, then makes its way half out of the shell, and remains in this condition, but without further life or motion, until the perfect fly comes out of a slit in the back.

THE SAWYER FLY.

The Sawyer Fly, so called from its faculty of sawing asunder the branches of trees, whose substance is its food, is about three inches in length when full grown, and is a very singular insect.

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Its head has somewhat the appearance of that of an elephant, having a horny bill like the snout of that animal, bending upwards from the under part with another pointing downward from the upper part of the head, both of a jet black, and of a fine polish. On the inner surface of the upper bill, are raised points, like the teeth of a saw, which are used by the insect in the same manner. Its body is like that of a beetle, but considerably larger, with double wings, the inner of which is like coarse gauze; and its legs are armed at each joint with crooked sharp nails, with the same on each toe, like a bird.

The process of this insect in sawing down branches of trees, is really admirable, but it is hardly possible to form an idea of the manner of doing it without a description. This work it performs by encircling the branch with its bill, the points of which it fastens well into the wood, and turning round it briskly by the strength of its wings, which make a loud buzzing noise, it in a short time saws the branch asunder.

THE WASP.

Though the Wasp can gather no honey of its own, there is no animal more fond of sweets. It will pursue the bee, destroy it with its sting, and then plunder it of the honey bag, which it bears home to its nest. When no honey is to be

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had, they seek for the sweetest fruits of the garden, and wherever they are found, all other flies are seen to desert the place immediately.

While the summer heats continue, they are bold and voracious; but as the cold increases, they lose their courage and activity, and become unable to provide a supply for their growing progeny. In a short time, therefore, the worms die, and may be seen carried out by the Wasps, who are probably directed by instinct to remove what would so soon putrify and render their nests unwholesome; still, however, their own sufferings continue, they have laid up no store for winter use, and are without defence against the cold, which, at last, becoming insupportable, they wither and die. In every nest, however, one or two females survive the winter, and begin in spring, to lay their eggs in a little hole of their own contrivance. This bundle of eggs, which is clustered together like grapes, produces two worms, which the female takes proper precaution to defend and supply, and these, when hatched, soon give assistance to their parent, who is employed in hatching two more. Thus is the community every day increasing, till, from a single female, ten thousand Wasps are seen produced before the month of June. After the female has thus produced her offspring, all in the middle of summer, they provide for themselves a large and commodious habitation composed of several stages of cells, in shape resembling those of the bee, and in this they deposit their eggs.

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THE ZIMB.

Of this very formidable African fly, we give the following interesting description from Mr. Bruce:

"This insect," says Mr. Bruce, "is a proof how fallacious it is to judge by appearances. If we consider its small size, nothing is more insignificant. Yet passing from these to the account of his powers, we must acknowledge, that the elephant, the rhinoceros, the lion, and the tiger, are still vastly his inferiors.

"The Zimb is in size very little larger than a bee; and his wings, which are broader than those of a bee, are placed separate like those of a fly. As soon as this plague appears, and their buzzing is heard, all the cattle forsake their food, and run wildly about the plain till they die, worn out with fatigue, fright, and hunger. No remedy remains for the residents on such spots, but to leave the black earth, and hasten down to the sands of Atbara, and there they remain while the rains last, this cruel enemy never daring to pursue them farther

"What enables the shepherd to perform the toilsome journey across Africa, is the camel, emphatically called the Ship of the Desert. Though his size is immense, and his body covered with a thick hairy skin, yet still he cannot sustain the violent punctures this fly makes with his proboscis. He must lose no time in removing to

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the sands of Atbara; for when once attacked by this fly, his body, head, and legs break out into large bosses, which swell, break, and putrify, to the certain destruction of the creature. Even the elephant and rhinoceros, who, by reason of their enormous bulk, and the vast quantity of food and water they daily need, cannot shift to desert and dry places, as the season requires, are obliged to roll themselves in mud and mire, which, when dry, coats them over like armour, and enables them to stand their ground against this winged assassin."

THE GNAT.

These insects, so well known by the severe wounds they inflict, and the itching pain they cause, afford an interesting history. Before they become flying insects, they have been, in some measure, fishes under two different forms. From the beginning of May till winter, small grubs may be seen with their heads downward, and their hinder parts on the surface of the water, from which part arises sideways, a kind of vent-hole, or small hollow tube, like a funnel, and this is the organ of respiration. The head is armed with hooks, that serve to seize on insects, and bits of grass on which it feeds. On the sides are placed four small fins, by the help of which the insect swims about, and dives to the bottom,

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This form is retained during a fortnight or three weeks, after which period they turn to chrysalids.

These chrysalids, remain on the surface of the water, in order to draw breath, but upon the least motion, are seen to unroll themselves from their spiral form, and plunge to the bottom, by means of little paddles situated at their hinder part. After three or four days of strict fasting, they pass to the state of Gnats. A moment before, water was the element of the little creature, but now become a winged insect, he can no longer subsist in it. He swells his head, and bursts his enclosure. It is impossible to behold, and not to admire, the amazing structure of its sting; which is a tube containing five or six stings of exquisite sharpness. These stings introduced into the veins, act as pump-suckers, into which the blood ascends, by reason of the smallness of the tubes. The insect injects a small quantity of liquor into the wound, by which the blood becomes more fluid, and is seen through the microscope passing through these stings. The animal swells, grows red, and does not quit its hold, till it has gorged itself. The liquor it has injected, causes, by its irritation, that disagreeable itching which we experience; and which may be removed by volatile alkali, or by scratching the part newly stung, and washing it with vinegar.

The female deposits her eggs in the water, placing them in the form of a little boat. This vessel, composed of two or three hundred eggs

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swims on the water for two or three days, after which they are hatched. If a storm arises, the boats are sunk. Every month, there is a fresh progeny of these insects. Were they not devoured by swallows, other birds, fish, and several carnivorous insects, the air would be darkened by them.

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